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ITU NEWS

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Plenipotentiary Conference 2014 in Busan

***Electing ITU
top executives***

Meet the candidates



Special Edition



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► Plenipotentiary Conference 2014 in Busan

PP-14: Deciding the future direction of ITU

Dr Hamadoun I. Touré
ITU Secretary-General

It gives me great pleasure to welcome you to the 19th Plenipotentiary Conference (PP-14), the biggest event in ITU's calendar, gathering nearly three thousand delegates from Member States, along with other groups from ITU's membership including private businesses, international organizations, civil society and academia. The conference will address important issues for the future of the Union, ranging from digital inclusion to broadband roll-out.

For three weeks (20 October to 7 November 2014), the international media spotlight will shine on the Republic of Korea and the city of Busan. I see this as the "ICT Olympics", taking place in a country that is a global hub for advancing innovation and shaping the future of information and communication technologies. Our hosts have put together an extensive programme of tech-focused side-events for delegates and media, and I am certainly looking forward to attending them, including a 5G forum, an exhibition of accessibility technology for persons with disabilities, an e-health exhibition, an expo on cloud computing and another on big data, as well as the country's annual Science and Creativity Festival.



I am also excited about ITU's new Gender Equality and Mainstreaming in Technology Awards (GEM-TECH). These annual awards will create a platform for advancing women's roles as decision-makers in the ICT sector, and the first winners will receive their awards during PP-14.

The plenipotentiary conference is ITU's top policy-making body. Held every four years, plenipotentiary conferences determine the Union's strategic direction and priorities, adopt its strategic and financial plans, and develop policies and recommendations in the light of industry developments, to help the Union address the evolving needs of its membership.

Hot topics

In Busan, PP-14 will elect the Union's five top executives, as well as the 12 members of the Radio Regulations Board and the 48 Member States to serve on the ITU Council over the next four years.

PP-14 will consider and approve a Strategic Plan, and the Financial Plan to back it, covering the years 2016–2019. Our Member States are expected to set their seal on an ambitious vision for the ICT sector that we — as a Union — want to see in the world in 2020. Dubbed Connect 2020, this vision highlights the role of ICT as a key enabler for social, economic and environmentally sustainable growth and development. Discussed,

drafted and proposed by the ITU membership via an open and transparent process, it includes four key goals — growth, inclusiveness, sustainability, and innovation and partnership — with measurable targets, and is embodied in the draft 2016–2019 ITU Strategic Plan endorsed by the 2014 session of the ITU Council.

The year-long multistakeholder process to elaborate the Connect 2020 goals and targets included contributions from vendors of telecommunications and ICT equipment, telecommunication operators, international, regional and national associations and organizations, civil society and private-sector organizations, as well as public administrations and online consultations.

During PP-14, activities will be organized around the four goals, focusing on how to address global challenges and seize opportunities, and the role of various stakeholders in achieving the Connect 2020 vision.

The agenda of the plenipotentiary conference, embodied in Article 8 of the ITU Constitution, is sufficiently broad to enable discussion of all topics of interest to the membership, and the work of the conference is based on proposals submitted by any of our 193 Member States — individually or through regional preparatory meetings. From the debates at the regional preparatory meetings for PP-14 and the proposals received at the time of this writing, many topics will be in the limelight. For example:

- ▶ Whether to open up access to ITU documents, including PP-14 documents.
- ▶ How — or indeed whether — to define ICT.
- ▶ What strategy to follow for maintaining a stable Constitution, in particular whether to abrogate Resolution 163 or to extend the work of the Council Working Group. As you know, it has always been the wish of our members to streamline the basic instruments of the Union (the Constitution and the Convention) and make them durable enough to stand the test of time.
- ▶ When to review the International Telecommunication Regulations, which were last updated in 2012 in Dubai (United Arab Emirates) and whether, before that, to assess the need for another world conference on international telecommunications.
- ▶ Whether or not to replace or renovate ITU's Varembe building, to rent premises locally, or to relocate the headquarters of the Union.
- ▶ How to deal with the resolutions on the World Summit on the Information Society (WSIS) and WSIS+10 review to reflect the latest developments in the WSIS process.
- ▶ Whether to discuss radio matters — in particular satellite jamming and governance of the Radio Regulations Board — at plenipotentiary conferences or at world radiocommunication conferences.

- ▶ How to add global flight tracking to the agenda of the World Radiocommunication Conference in 2015 (WRC-15) in the wake of the loss of the Malaysia Airlines aircraft. The International Civil Aviation Organization has expressed the wish to ensure that the matter is brought up at WRC-15, which might well be requested to allocate frequency for the monitoring of flight data. I believe it is important for ITU to be responsive to the requirements of the international community. This, of course, should be done in a neutral way and should not prejudge the results of the technical and regulatory studies that still need to be completed by the ITU Radiocommunication Sector (ITU-R).
- ▶ ITU's role in international Internet-related public policy issues. A multistakeholder model of Internet governance was a key outcome of the two phases of the World Summit on the Information Society in 2003 and 2005. The Summit's principles continue to be relevant as the world progresses towards more equitable, inclusive Internet governance. The Internet and the information society will play a key role in delivering social, economic and environmentally sustainable progress in the 21st century. In May this year, the ITU Council welcomed the role of various forums in facilitating discussions on international Internet-related public policy issues, including ITU's World Telecommunication/ICT Policy Forum, the Internet Governance Forum and NETmundial, hosted by the Government of Brazil in São Paulo in April 2014. PP-14 will review the Internet resolutions that were first approved in Minneapolis in 1998 and subsequently revised at other plenipotentiary conferences.

Building confidence and security in the use of ICT will also be addressed, as part of ITU's effort to make cyberspace safer. For example, we are trying to prevent cyberbullying through our Child Online Protection initiative, an international collaborative network that provides guidance to multiple audiences on creating a safe online environment for children.



AFP

Other topics that the conference will consider include: emergency communications; climate change and the protection of the environment; e-applications (including e-health); measuring the information society; next-generation networks; conformance and interoperability; bridging the standardization gap; international numbering resources; future direction of ITU Telecom events; strengthening ITU's regional presence; ITU's potential role as supervisory authority of the future international registration system for space assets under the draft Space Protocol; remote participation in ITU meetings; free online access to ITU publications; confirming membership for Academia (which is currently accorded for a trial period); use of the six ITU official languages on an equal footing; continuing the work of the Independent Management Advisory Committee; financial matters for consideration by the Council (in particular with regard to managing the Reserve Account); linking strategic, financial and operational planning in ITU; human resources; and the introduction of a long-term care insurance scheme in the Union.

We are also likely to see a proposal to increase youth participation in ITU. With an emphasis on the younger generation, we hope to cultivate the ICT leaders of tomorrow and strengthen ITU in years to come.

Towards a knowledge society

In Guadalajara, Mexico, PP-10 paved the way for the information society. We expect PP-14 to set the stage for the knowledge society and the Internet of Things, with people and devices connected wirelessly, and technology seamlessly interoperable. This will put a lot of pressure on ITU in managing the global spectrum and in setting new standards to ensure that devices and systems are interoperable and affordable. Spectrum is a limited resource and it therefore needs to be managed properly so that we all benefit from an interference-free world.

We are already moving towards this integrated future. ITU is working on initiatives such as the development of the future networked car, smart sustainable cities, green standards, and smart water management. ITU's unique collaborative public-private platform encourages global multistakeholder input and is the most effective way of realizing the promise of these visions. I believe that ICT will continue to drive innovation and provide multiple benefits in areas such as education, health and transport.

Broadband to bridge the digital divide

The Broadband Commission for Digital Development, co-chaired by President Paul Kagame of Rwanda and Carlos Slim Helú, Chairman of Grupo

Carso and President of the Carlos Slim Foundation and composed of around 60 Commissioners, held its 10th Meeting in New York on 21 September 2014, to coincide with the start of the 69th session of the United Nations General Assembly. At this crucial time, when the process of setting the post-2015 development goals is nearing completion, the commissioners and special guests discussed the importance of achieving recognition of broadband and ICT as critical components of a sustainable development framework. The discussion also addressed the challenges facing both the industry and regulatory players, including obstacles to financing and investment in broadband infrastructure.

According to the 2014 edition of the Commission's report on the State of Broadband, around 40 per cent of the global population will be online by the end of this year, with the vast majority of the growth in broadband access coming from mobile broadband, which now accounts for three times as many connections as fixed broadband. The report forecasts that more than half of the global population will have Internet access by 2017, with mobile broadband over smartphones and tablets as the fastest growing technology in human history.

But the digital divide still represents a significant hurdle for social development, with just 32 per cent of people in the developing world using the Internet compared with 78 per cent in the developed

The State of Broadband 2014: broadband for all

A REPORT BY THE BROADBAND COMMISSION

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world. This means that there are still billions of people globally who do not get the same opportunities to access education, health services and employment, among other things, leaving them further behind in the global economy.

Broadband uptake is accelerating, but it is unacceptable that over 90 per cent of people in the world's 48 least developed countries remain totally unconnected. Connectivity is not a luxury for the rich — rather, it is the most powerful tool humankind has ever had at its disposal to bridge development gaps in areas such as health, education, environmental management and gender empowerment.

We need Member State champions to join us in our relentless efforts to ensure

that broadband and ICT are included among the sustainable development goals of the post-2015 development agenda. I am convinced that, with the brainpower and enthusiasm abounding at PP-14, we can succeed in our quest.

I expect the debates on all topics at PP-14 to be lively, but to take place with the customary good will and mutual respect. We at ITU have a tradition of hearing all views, seeking compromises and achieving consensus, so that we can move forward as one Union.

As always at ITU events, it is the Member State delegations that lead the way. We at the ITU secretariat will strive to ensure that the conference provides a venue for all voices to be heard.

Looking ahead

On a personal level I am proud to have served ITU as Secretary-General for the past eight years, and would like to express my gratitude to all our members for their tremendous support throughout these years. The Union will celebrate its 150th anniversary in 2015. To be able look back on 150 years of successful international cooperation, as ITU can do, is a unique opportunity. I trust that this organization will continue to be dynamic and innovative to stay at the forefront of information and communication technologies. ■



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Plenipotentiary Conference 2014 in Busan

Electing ITU top executives

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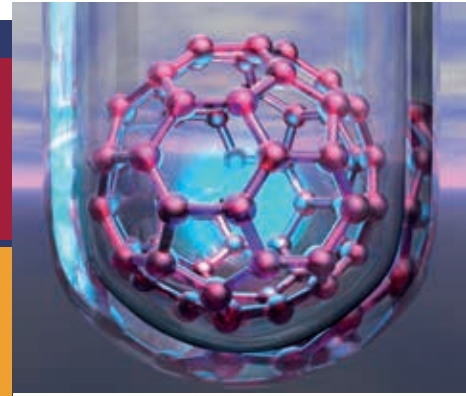
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Yanghee Choi
Minister of Science, ICT and Future Planning of the Republic of Korea

► *The Republic of Korea welcomes the world*

The 19th ITU Plenipotentiary Conference (PP-14) will be held in Busan, the second biggest city in the Republic of Korea, from 20 October to 7 November 2014. This is the second ITU Plenipotentiary Conference to be held in the Asia-Pacific region, the first having taken place in Kyoto, Japan, in 1994.

The conference will take place at the state-of-the-art BEXCO Centre, and is hosted by the Ministry of Science, ICT and Future Planning of the Republic of Korea. Around 3000 government delegates,

including 150 ministers and vice-ministers are expected to participate in PP-14, and over 300 000 visitors are likely to attend the many special events that have been arranged to coincide with PP-14, as outlined below.

"The Republic of Korea is an ICT powerhouse and plays a pivotal role in the international ICT community, engaging in a number of activities to promote information and communication technologies as enablers of social development and innovation" says ITU Secretary-General

Hamadoun I. Touré. The Republic of Korea has used its strong position within the international ICT arena to foster digital inclusion in Africa, with the Korean Trust Fund on ICT4D allocating roughly USD 51 million over a two-year period to promote ICT development projects in the region. These include the expansion of an affordable broadband infrastructure and education programmes to create the next-generation ICT sector.

As the home of technology giants such as Samsung and LG, the Republic of Korea



Wonki Min
Chairman-Designate of the ITU
Plenipotentiary Conference 2014



Byung-soo Seo
Mayor of Busan Metropolitan City

is also a leader in advancing technology through innovation. This move towards innovation has also led to the development of strong and successful public-private partnerships.

Using public funds to launch programmes which promoted broadband development, the Republic of Korea has rapidly become an ICT leader, with the world's highest number of broadband services per capita. Over 97 per cent of households have access to the Internet, there is over 100 per cent uptake in mobile broadband and the country has led ITU's ICT Development Index for several years in a row. "The country's commitment to ICT as a pillar of development and the Korean people's natural affinity with ICT make it the ideal venue to host PP-14, which will perfectly lead the way into our 150th celebrations next year, which have the theme of 'Telecommunications and ICTs: Drivers of Innovation', a concept validated in the Republic of Korea — a leader in many areas of ICT. After visiting the Republic of Korea in 2012 and 2013 and personally seeing the preparations first-hand, I have no doubt that PP-14 will

be an outstandingly successful event," says Dr Touré.

An exciting line-up of host country side-events

The government of the Republic of Korea is preparing some exciting side-events for the delegates and public to enjoy, such as a cultural festival and an ICT industry trade show focusing on innovation in the field.

The World IT Show 2014 will be held from 20 to 23 October at BEXCO Exhibition Center 2. This is the Republic of Korea's biggest ICT exhibition, showcasing technologies and products of domestic and international companies across the whole ICT sector. Domestic and international companies take advantage of the show to launch products, and there is an Export Fair that attracts overseas buyers. The World IT Show 2014 is being hosted by the Republic of Korea's Ministry of Science, ICT and Future Planning, and the City of Busan, and it is being organized by the Korea International Trade Association,

Hankyung, Electronic News, COEX, K. Fairs, and the Korea Association for ICT Promotion. Around 350 companies will participate (with some 1000 booths in total) and 170 000 visitors are expected.

The Global ICT Premier Forum will take place on 27 and 28 October at the BEXCO Auditorium, with a "3Cs" theme — "Creative Government, Creative Enterprise, Creative User" — and the sub-theme "Creative Economy's Solution: Design hyper-cooperation". The forum provides lectures by renowned host-country and international experts and CEOs, and offers a platform where relevant experts, including high-ranking policy-makers, can discuss technology trends and future prospects for ICT. The event is being hosted by the Ministry of Science, ICT and Future Planning, and is being organized by the Korea Association for ICT Promotion and the National IT Industry Promotion Agency. Besides PP-14 participants, a further 2000 people (including the general public and people from institutions, companies, academic societies in the ICT sector) are expected to attend.

Several cultural events, including the u-Clean Concert, will be held during PP-14 to promote the culture of the Republic of Korea. Events include: the Smart Hallyu Festival, which combines cultural content with ICT; tourist programmes for visitors; and ICT industrial site visits. Special performances will provide entertainment for visitors as well as participants.

The Health IT Show 2014 will take place from 27 to 29 October at BEXCO Exhibition Center 2. The event will showcase the Republic of Korea's outstanding use of IT in health care. Seminars and an exhibition will highlight the digital hospital, u-health, wellness, bio-technologies and services, medical informatics and digital health care. The show will also serve as a platform for business, with its Export Fair and consulting sessions on expanding the Republic of Korea's network of digital hospitals overseas. The event is being organized by BEXCO and the Korea Trade-Investment Promotion Agency.

The 2014 Science & Creativity Festival will be held from 3 to 8 November at BEXCO Exhibition Center 2. The festival is the country's biggest and oldest science festival, and provides various opportunities to experience the convergence of science and culture. Around 300 institutions (schools, organizations, and government-funded research institutes) will present about 400 programmes in which visitors can participate. New scientific technologies will be showcased, and there will be a series of performances,

talks and concerts. Around 200 000 visitors, including primary and middle-school students, parents, teachers and others, are expected. The event is being organized by the Korea Foundation for the Advancement of Science and Creativity, and the City of Busan, with sponsorship by the Republic of Korea's Ministry of Education, Ministry of National Defense, Ministry of Culture, Sports and Tourism, Ministry of Trade, Industry and Energy, and Ministry of Environment.

Cloud EXPO Korea will take place from 27 to 29 October at BEXCO Exhibition Center 2. The exhibition aims to expand and promote the cloud computing market, and about 70 companies (from the Republic of Korea and other countries) will participate. Various sessions will be held simultaneously with an exhibition of new technologies and products (cloud services, infrastructure, security, platforms, and so on). Industry trends and new technologies from the Republic of Korea and beyond will be presented. There will also be time for buyers to consult exhibitors. The event is being organized by the National IT Industry Promotion Agency and the Busan IT Industry Promotion Agency.

The 5G Global Summit will take place on 20 and 21 October in the BEXCO Auditorium. Internationally renowned figures will discuss 5G mobile business and national policies to promote 5G. There will be a panel discussion on international coordination to secure bandwidth for 5G around the globe. Research and

development projects in the Republic of Korea, China, Japan and Europe will be presented. The summit is being organized by the 5G Forum and sponsored by its membership.

The Big-Data World Convention, being held on 22 and 23 October, will present the outlook for the big-data industry, development strategies for the industry, and recent research related to collecting and managing the huge amount of data real-time, and using it in a creative way to develop big data into a future growth engine. Around 1000 people will attend the convention, which is being organized by the National Information Society Agency, Maeil Business Newspaper and BEXCO, and sponsored by the Ministry of Science, ICT and Future Planning, and the City of Busan.

The Indoor Positioning and Indoor Navigation (IPIN) Symposium will be held from 27 to 30 October. This is the only international academic conference in the field of indoor positioning and indoor navigation, and will be attended by about 300 experts. During the symposium, companies and research institutes will present the outlook for indoor positioning technology and will showcase products. The symposium is being organized by the Korean Institute of Communications and Information Sciences, Electronic and Telecommunications Research Institute, and is being sponsored by the Ministry of Science, ICT and Future Planning, the Ministry of Land, Infrastructure and

Transport, the City of Busan, and the Busan Tourism Organization.

On 29 October, at the u-Paperless International Conference 2014, digital document experts from advanced countries will be invited to share their and other countries' digital document systems, technologies, and recent trends. The theme of the conference is "Document Intelligence — Beyond Paperless", and the event is being organized by the National IT Industry Promotion Agency and the Korea Digital Content Industry Association. The conference will provide a

showcase for presenting digital document technologies and policies to the global market. Around 30 companies from 10 countries (including the Republic of Korea, the United States, Germany, Austria, and Japan) will participate. The conference is expected to attract some 1500 visitors.

In an academic seminar to be held from 20 October to 7 November, experts will gather to discuss recent advances in information and communication technologies, as well as related policy matters. The seminar is expected to attract around

1000 participants from academic societies, associations, and institutions in the information and communications sector.

The Busan International Fireworks Festival is the city's iconic and biggest cultural festival. It will be held on 24 and 25 October 2014 at Gwangalli Beach near Gwangan Bridge. The festival is being put on by the Organizing Committee for the Busan Culture and Tourism Festival. The event kicks off with a street parade on 24 October, followed by a concert. There is another concert on 25 October and the event culminates in a fireworks display.



A land of calm and culture

The Republic of Korea is a beautiful country often referred to as the “Land of the Morning Calm”. The country is alive with a rich tradition and culture that spans 5000 years of history.

The Korean language, like Hungarian, Turkish, Mongolian and Finnish, is classified as belonging to the Ural-Altaic language group. Hangeul (the Korean alphabet) is composed of ten simple vowels and 14 consonants. In 1443, a group of scholars under the patronage of King Sejong the Great developed this systematic rendering of spoken sound. Hunminjeongeum, a historical document that provides instructions about educating people on the use of hangeul, is registered with UNESCO as a World Heritage treasure, and UNESCO also awards the “King Sejong Literacy Prize” every year in memory of the inventor of hangeul.

The design of the national flag of the Republic of Korea is rooted in Asian philosophy. The red and blue shapes represent the proactive cosmic forces of the yang and yin. The two forces together embody the concepts of continual movement, balance and harmony that characterize the sphere of infinity.

The trigrams on each corner of the rectangular flag symbolize heaven, earth, water and fire.



The national flower is the mugunghwa (Rose of Sharon), and a profusion of its blossoms grace the entire country from July to October. The mugunghwa is remarkably tenacious and able to withstand both blight and insects. The flower’s symbolic significance stems from the Korean word mugung, which means immortality, and accurately reflects the enduring nature of Korean culture along with the determination and perseverance of its people.



Host city Busan

Busan embodies the spirit of the Nakdonggang River and the wits of Mount Geumjeongsan. It is the city of liberty that upheld the self-respect of the people and opened a new chapter in the history of democracy, as well as being the gateway connecting Eurasia and the Pacific, embracing and blending the cultures of the continent and ocean.

Busan is changing day by day as the central axis of Northeast Asia’s economic bloc, as the hub of the film and video industry, and as the city of the ocean, logistics and finance. The opening of its port in 1876 marked the city’s future as an international city of trade, commerce and industry.

The camellia is Busan’s flower, its dark green leaves and dark red flowers representing the green-blue sea and the warm spirit of citizenship. ■

► **Electing ITU top executives**

Meet the candidates

One of the duties of the Plenipotentiary Conference is to elect the top management of ITU to lead the work of the Union in the coming four years. There are five such posts: Secretary-General, Deputy Secretary-General, Director of the Radiocommunication Bureau, Director of the Telecommunication Standardization Bureau, and Director of the Telecommunication Development Bureau.

ITU News invited all candidates to participate in an interview by responding to a set of questions (twelve, for the posts of Secretary-General and Deputy Secretary-General, and ten for the posts of Directors of the Bureaux). Some of the questions were optional.

The answers received by the closing date for the magazine's publication (22 August 2014) are reproduced in alphabetical order of the candidates' surnames where there is more than one candidate for the same post. In these interviews, candidates outline their vision of how telecommunications and information and communication technologies will affect our world in the coming years, and how, if they were elected, their own personal contribution and leadership would shape that future. ■



Busan City Government



Houlin Zhao
China



“ In a constantly changing environment, it is important to be able to adjust our order of priorities to respond to the situations we face. At this moment, I would like to highlight the following three priority areas: ITU membership, ITU’s effectiveness and ICT promotion...”



Interview with Houlin Zhao

Candidate for the post of ITU Secretary-General

What are your top three priorities for ITU and how do you see the Union's continued relevance in a hyper-connected world?

■ **Houlin Zhao:** In a constantly changing environment, it is important to be able to adjust our order of priorities to respond to the situations we face. At this moment, I would like to highlight the following three priority areas.

ITU membership — I will continue to work to secure confidence and to enlist the support of ITU Member States, as well as to strengthen the participation of Sector Members, Associates and Academia in ITU activities.

ITU's effectiveness — I will increase the efficiency of ITU in order to meet new challenges, and will enhance our cooperation with partners to strengthen ITU's leading position in global ICT development.

ICT promotion — I will work to promote telecommunication and information

and communication technology services to help achieve a better life for all.

Information and communication technologies (ICT) are key enablers of social and economic development and of an environmentally sustainable future for all of the world's people. The astounding growth that we have seen in recent years, particularly in mobile and ICT-enabled applications, will continue. The world of big data is evolving rapidly.

Meanwhile, end users are concerned about issues such as security, privacy, quality of service, and service charges. Service providers are facing challenges in regard to investment and the sustainability of business models. Regulators are focusing on the healthy development of markets. All these stakeholders will continue to play their roles in the future development of ICT, striving to maximize the benefits and minimize inherent risks. In this environment, ITU will become ever more relevant.

Building consensus involves carefully listening to different parties, understanding their concerns and encouraging them to make compromises.

The ITU membership traditionally takes decisions on the basis of consensus. What approaches have you used in the past to build consensus?

Houlin Zhao: Building consensus involves carefully listening to different parties, understanding their concerns and encouraging them to make compromises.

I have successfully used this approach on numerous occasions during more than two decades of working in ITU. To give just one example, as Director of the Telecommunication Standardization Bureau (TSB) I led discussions between ITU, the International Organization for Standardization (ISO), and the International Electrotechnical Commission (IEC) on harmonizing policy approaches to intellectual property rights. Through mutual respect and patiently addressing the concerns of each of these three organizations, I managed to steer the discussions towards consensus, leading to the adoption of a Common Patent Policy for ITU/ISO/IEC, still in use today.

ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization, and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

Houlin Zhao: From the outset, the ITU "federal" structure has demonstrated its worth.

As Deputy Secretary-General, I assisted the Secretary-General and coordinated with the other elected officials in successfully managing ITU's activities and strategies, and maintaining good contacts with members. Also, from my eight years of experience as Director of TSB, I know how important it is for ITU's top management to work together as a team.



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Post of ITU Secretary-General



Looking ahead, I would draw strength from the good teamwork of the elected officials and from my experience of the “federal” system, using its advantages to strive for even better management of the Union in the future.

What do you see as ITU’s aims in continuing to lead the World Summit on the Information Society?

■ **Houlin Zhao:** The WSIS process was initiated by ITU Member States at the Plenipotentiary Conference in Minneapolis, United States, in 1998, and ITU successfully managed two phases of WSIS — one in Geneva in December 2003 and the other in Tunis in November 2005.

WSIS has modernized the concept of the information society across the globe. The annual WSIS Forum, which ITU organizes in coordination with the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Development Programme (UNDP), allows Member States and other stakeholders to share their success stories and lessons of ICT development.

Because there are still many challenges and opportunities to be taken up by the global ICT family, I would support the efforts being made by our members for ITU to continue to lead the WSIS process beyond 2015.

The United Nations post-2015 sustainable development agenda will address new challenges facing people and the planet. How should ITU contribute to shaping that agenda?

■ **Houlin Zhao:** I led an ITU delegation to participate in the United Nations Conference on Sustainable Development (Rio+20), held in Brazil, in June 2012. I am very pleased that the resulting outcome document — “The Future We Want” — repeatedly highlights the importance of ICT for sustainable development. “The Future We Want” underlines the need to improve access to ICT, especially broadband networks and services, and to bridge the digital divide.

The United Nations Member States are engaged in formulating a single development framework — the Post-2015 Development Agenda and Sustainable Development Goals.



For the future, I would like to see devices with more intelligent functions, but that are simpler and easier to use.



We have to continue convincing stakeholders that ICT play an important role in promoting the economic, social and environmental dimensions of sustainable development, and will thus contribute to a sustainable future for the planet and for present and future generations.

We will actively participate in the United Nations process for future sustainable development. We will encourage Member States, industry, non-governmental organizations and all stakeholders to join in our efforts to promote sustainable development through the use of ICT, and wherever possible we will join in their efforts to achieve the same goal.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

Houlin Zhao: Mobile phone communications and the Internet are two recent innovations that have changed societies everywhere on the globe. Smartphones or cloud computing could be the third, but

I would pick the liberalization of the telecommunication market and the introduction of market competition as an approach that has greatly contributed to the success of new technologies in today's world.

For the future, I would like to see devices with more intelligent functions, but that are simpler and easier to use.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

Houlin Zhao: We should continue to work hard to improve the gender balance and to support youth. But I do not want to single out just one or two specific items from my list of priorities, which covers other urgent or important areas such as universal access, empowering indigenous people, and child online protection. We will work together to address issues in areas where actions are justified.

People are a crucial part of any organization. What is your message to ITU staff?

Houlin Zhao: Staff are the Union's greatest asset, and by working together in a motivated and efficient team they keep



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Post of
Secretary-General of ITU



ITU dynamic, energetic and successful. Speaking as an elected official, I can say that we are very proud of our staff.

I myself was a staff member of ITU between 1986 and 1998, and of course I like to see our staff enjoying their work. I would like to assure our staff that I will endeavour to make ITU better and stronger.

If you had to describe yourself in three words, what would they be?

■ **Houlin Zhao:** Vision, Action, Harmony. ■

> Short biography of Houlin Zhao

Houlin Zhao was elected ITU Deputy Secretary-General at the ITU Plenipotentiary Conference in Antalya, Turkey, in 2006, and re-elected for a second four-year term at the Plenipotentiary Conference in Guadalajara, Mexico, in 2010. Before becoming Deputy Secretary-General, he served as Director of ITU's Telecommunication Standardization Bureau (TSB) from 1999 to 2006, first elected at the Plenipotentiary Conference in Minneapolis, United States, in 1998,

and re-elected at the Plenipotentiary Conference in Marrakesh, Morocco, in 2002. From 1986 to 1992, Mr Zhao was a senior staff member in what was then the International Telegraph and Telephone Consultative Committee (known under its French acronym CCITT), and from 1993 to 1998 in TSB. Prior to joining ITU, Mr Zhao served as an engineer in the Design Institute of China's Ministry of Posts and Telecommunications. He contributed seminal articles to a number of prestigious Chinese technical

publications, and in 1985 was awarded a prize for his achievements in science and technology within the Ministry of Posts and Telecommunications. Born in 1950 in Jiangsu, China, Mr Zhao graduated from Nanjing University of Posts and Telecommunications, and holds a Master of Science degree in Telematics from the University of Essex in the United Kingdom. Mr Zhao is married with one son and two grandchildren, and is fluent in three official ITU languages: English, French and Chinese.

Magdalena Gaj

Poland



“ ITU should focus on connecting the unconnected, providing more spectrum for industry, and fostering consumer protection. Why? Because two-thirds of the world’s population still cannot enjoy the benefits of information and communication technologies. Broadband roll-out is essential...”



Interview with Magdalena Gaj

Candidate for the post of ITU Deputy Secretary-General

What are your top three priorities for ITU and how do you see the Union's continued relevance in a hyper-connected world?

■ **Magdalena Gaj:** ITU should focus on connecting the unconnected, providing more spectrum for industry, and fostering consumer protection.

Why? Because two-thirds of the world's population still cannot enjoy the benefits of information and communication technologies (ICT). Broadband roll-out is essential. Not only does a 10 per cent increase in broadband penetration yield additional growth in gross domestic product (GDP) exceeding 1 per cent, but it also empowers citizens and gives them the chance of a better life.

In order to strengthen its relevance in the hyper-connected world, ITU has to foster its multistakeholder approach, reinforce cooperation between regions, offer mutual help, and exchange best practices.

The ITU membership traditionally takes decisions on the basis of consensus. What approaches have you used in the past to build consensus?

■ **Magdalena Gaj:** Our mission at ITU is to respond to the needs of all the Member States and their citizens. Consensus building involves listening to the needs of all the stakeholders and acting diplomatically on those bases.

As a leader of the successful switch-off of analogue television in Poland I learned to build consensus the hard way. Initially, our broadcasters tried hard to disrupt the process. But through my determination and willingness, I convinced them to start a dialogue. I have always been collaborative, but never afraid to take important decisions.

ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance.



Our mission at ITU is to respond to the needs of all the Member States and their citizens. Consensus building involves listening to the needs of all the stakeholders and acting diplomatically on those bases.



How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **Magdalena Gaj:** Unity is essential to achieve the Union's goals and properly respond to challenges of the new digital world. Therefore, I willingly support further strengthening of cooperation within the entire structure, despite potential differences.

The General Secretariat should continue its coordinating function so — instead of duplications — we can focus on creating synergies between the activities of all the Sectors. That, in turn, will further reinforce the natural leadership of ITU in the ICT ecosystem.

What do you see as ITU's aims in continuing to lead the World Summit on the Information Society?

■ **Magdalena Gaj:** WSIS has been a vital milestone in the history of the United Nations system. Having introduced a multistakeholder approach into the United

Nations processes, it put ICT on the United Nations agenda to facilitate development. Aren't we proud of ITU making WSIS so impactful in levelling differences — internationally, regionally and nationally — with plenty of evidence reported every year?

Besides, in synergy with the private sector, WSIS supports the citizens of United Nations Member States in using ICT.

The United Nations post-2015 sustainable development agenda will address new challenges facing people and the planet. How should ITU contribute to shaping that agenda?

■ **Magdalena Gaj:** The post-2015 world and citizen will be mobile and the industry will be ever more global, requiring ultra-fast connectivity.

The development of the Internet should achieve the goals of accessibility and safety, as well as full understanding of the Net's own capacity.

ITU should advocate universal and affordable access to broadband services,



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promoting the adoption of broadband plans by its Member States.

Millions of people's lives have already been improved. Even more can be done if we connect the unconnected and enable their full access to e-health or e-education. Among our future challenges are e-waste, environmental protection, cybersecurity, and the education of non-digital natives.

With our combined efforts, the United Nations post-2015 agenda will recognize ICT as a powerful facilitator.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **Magdalena Gaj:** Firstly, mobility of various devices guarantees unprecedented freedom to every single user. Secondly, satellite navigation systems save time, money and — most importantly — lives. Thirdly, the Internet of Things, now entering the stage, raises productivity, facilitates transport and fosters eco-friendly lifestyles.

There is so much more awaiting us on the horizon. A few decades from now innovative sociable robots will help the elderly in the ageing society, and then we will find out if a robot can replace the human touch.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **Magdalena Gaj:** In many cases, tackling gender inequality means battling prejudice, so the key factor is a change in public awareness.

Gender stereotypes won't take us far. Since we have numerous outstanding women doctors, nurses and teachers, why can't we have just as many great women managers, IT workers and telecommunication network engineers?

We should promote success stories of female leaders and ICT experts, who — acting as role models and pioneers — will motivate other women to take on leadership positions in our sector.

To my knowledge, the best teams are composed of men and women who appreciate and respect each other's contributions. Hence, the role of men is invaluable. They should be advocates of this cause.

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A few decades from now innovative sociable robots will help the elderly in the ageing society, and then we will find out if a robot can replace the human touch.

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Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Magdalena Gaj:** Involving young people — digital natives — attracts our attention to the issues relevant to them and inspires ITU with innovative ideas. The BYND 2015 Global Youth Summit held last year in Costa Rica gave a perfect opportunity to listen to the voice of youth.

At the same time, with its experience, wisdom and authority, the Union should offer the young a reliable code of conduct in the digital world.

Hence, we should further strengthen the ITU internship programme, engaging with universities, research institutions and possible funding partners.

People are a crucial part of any organization. What is your message to ITU staff?

■ **Magdalena Gaj:** People are amazing because they are capable of remarkable achievements producing extraordinary results. They possess all the resources and tools that they need to succeed.

I have always believed that people are complete. Therefore, I never try to

change anyone. The challenge facing all leaders is to let their staff members use their personal potential — the exceptional potential of each individual. In truth, individuals create the quality and image of the organization they are part of.

What has been the most rewarding moment in your professional life?

■ **Magdalena Gaj:** One was my leading role and personal involvement in the entire process of creating and implementing the bill which abolished telecom investment restrictions in Poland.

Then, the transition from analogue to digital television put me in charge of the whole process from the decision-making stage, through the implementation and supervision phases.

These two tasks provided the most invaluable experience in successful project and team management.

What personality has most influenced your way of seeing the world?

■ **Magdalena Gaj:** I am inspired by Marie Curie-Sklodowska, a distinguished Polish chemist. Her tenacity, dedication and passion resulted in discoveries in radiation,



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which are now part of the most sophisticated cancer-treatment protocols in the world. Above all, she made a scientific career achievable for countless girls around the world, with her two Nobel Prizes awarded in a century when only men gained public recognition for scientific research. She made me believe that the impossible is possible if you try hard.

If you had to describe yourself in three words, what would they be?

■ **Magdalena Gaj:** How about six words? “Things happen when we do them.”

You can’t see me now, but whenever I say these words, I am beaming. Because, for me, a smile is the most significant punctuation mark.



> Short biography of Magdalena Gaj

Magdalena Gaj has been working in public administration for over 12 years. She has long experience of holding the highest State posts. Since the beginning of 2012, she has been President of the Polish national regulatory authority (Office of Electronic Communications — UKE). From 2009 to 2012 she was the Undersecretary of State responsible for the Polish telecommunication

market. Both in the Ministry and in the regulatory authority, she has dealt with investment barriers in the telecommunication sector. Ms Gaj was the key leader in the digitization process in Poland. Thanks to her commitment and determination, the switch-over process was carried out smoothly and efficiently.

During her work Magdalena Gaj has been recognized as a talented manager capable of reconciling the interests of consumers, the government and operators. Her commitment to supporting activities in the ICT sector in Poland has been rewarded by many prestigious domestic and international bodies.

Bruce Gracie
Canada



“ My priorities will be to ensure the effective fulfilment of the ITU mandate, the efficient and cost-effective management of the Union, and increased accountability and transparency at all levels. ”



Interview with Bruce Gracie

Candidate for the post of ITU Deputy Secretary-General

What are your top three priorities for ITU and how do you see the Union's continued relevance in a hyper-connected world?

■ **Bruce Gracie:** As Deputy Secretary-General, my priorities will be to ensure the effective fulfilment of the ITU mandate, the efficient and cost-effective management of the Union, and increased accountability and transparency at all levels. Every day, the world grows smaller and more connected as a result of the Internet, smartphones, broadband and other telecommunication and information and communication technologies. As ITU approaches its 150th anniversary, our mandate to work with Member States, and other stakeholders, in ensuring efficient use of these expanding and evolving technologies is now more relevant than ever before.

The ITU membership traditionally takes decisions on the basis of consensus. What approaches have you used in the past to build consensus?

■ **Bruce Gracie:** As a former Chairman of the ITU Council (2006) and the Radiocommunication Assembly (2007), as well as my 15 years as Chairman of the Council Working Group on Financial and Human Resources, I have learned that Member States will achieve consensus if the Chairman treats all differing positions with respect and impartiality. I always try to identify and encourage those points of agreement which can unite all points of view.

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... I have learned that Member States will achieve consensus if the Chairman treats all differing positions with respect and impartiality. I always try to identify and encourage those points of agreement which can unite all points of view...

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ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

Bruce Gracie: Like ITU, Canada is also a federal system. As a Canadian, I know from personal experience what it takes to make a federal system successful. The autonomy of each entity is to be encouraged. When the General Secretariat and the three Sectors interact as strong and equal partners, we can resolve all problems facing ITU. There is always strength in diversity.

What do you see as ITU's aims in continuing to lead the World Summit on the Information Society?

Bruce Gracie: The World Summit on the Information Society (WSIS) established an ambitious road map for improved global telecommunications. As governments around the world struggle with their own issues, whether financial or political, ITU should continue to encourage and enable governments to respect their WSIS commitments for the good of all.

The United Nations post-2015 sustainable development agenda will address new challenges facing people and the planet. How should ITU contribute to shaping that agenda?

Bruce Gracie: The United Nations goals for sustainable development are the drivers to improve the lives of everyone on Earth. These goals cannot be met without the enabling technology. Foremost among these are telecommunication and information and



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communication technologies. This is what is meant when people use words like e-health, e-commerce and e-education. ITU should be the leading voice for the use of communication technologies within the United Nations family.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

Bruce Gracie: Standardization — Can you imagine a world where telephones and other communication devices could not interact seamlessly with each other? As I travel the world, communicating with Member States and other stakeholders, I could not do this without the standardization of communication protocols between countries.

Internet — the Internet has brought us all closer together, has given us access to instant information, and has broken down and often eliminated barriers in many areas of our lives.

Smartphones — the evolution of the smartphone has put an affordable and transportable computerized communication device in our pockets. Every day these devices change our lives for the better.

It is expected that one of the most significant technological innovations in the future will enable advanced connectivity of devices, systems and services that cover a wide variety of protocols, domains and applications, such as environmental monitoring, energy management and transportation systems. Referred to as "Internet of Things" or "Cloud of Things", our ability to connect all "things" in the future will be enhanced in ways that are unimaginable.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

Bruce Gracie: Canada has put forward a series of proposals on gender mainstreaming and the recruitment of qualified women into ITU. I have always been a supporter of the concept of gender equity in ITU management. As Deputy Secretary-General, I will reach out to Member States and encourage them to bring forward qualified women candidates. I will then ensure that the most

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The evolution of the smartphone has put an affordable and transportable computerized communication device in our pockets. Every day these devices change our lives for the better.

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qualified candidate, regardless of gender, is appointed. For existing staff, we need to ensure that ITU Human Resource procedures encourage and facilitate the career development and retention of women.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

Bruce Gracie: I believe Dr Touré has made great strides in involving young people with the work of ITU over the past eight years. A perfect example is the Global Youth Summit held in Costa Rica in 2013. We need to follow in his footsteps and continue to innovate in this area. Just because ITU is going to be 150 years old doesn't mean we can't be "cool".

People are a crucial part of any organization. What is your message to ITU staff?

Bruce Gracie: In my various roles over the past 15 years, I have had the pleasure of working with many ITU staff members, in all the Sectors and the General Secretariat. I believe ITU staff

are professional, dedicated and highly motivated. For me, words like efficiency, effectiveness and transparency are not just slogans. They are the crucial elements to the on-going success of ITU and I look forward to working with ITU staff, at all levels, to attain the goals I have set for myself and the organization.

What has been the most rewarding moment in your professional life?

Bruce Gracie: I have been fortunate to spend my working career dealing with telecommunication/ICT issues. I have had many rewarding moments during this time. But, if I had to choose, I would say the most rewarding was being awarded the ITU Gold Medal for my work as Chairman of the Radiocommunication Assembly in 2007.

What personality has most influenced your way of seeing the world?

Bruce Gracie: I have lived in an era of many great visionaries and leaders, both women and men. The most influential of these was Nelson Mandela. His ability to forgive the past and move forward in a



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positive and constructive manner continues to be an inspiration to me and, I hope, to many others.

If you had to describe yourself in three words, what would they be?

Bruce Gracie: Integrity, Honesty, Impartiality.



> Short biography of Bruce Gracie

Dr Bruce Gracie is Canadian and is married with two children. He obtained his PhD in 1976 and has over 30 years' experience working on international telecommunication/ICT matters. Bruce has worked in various capacities for the Canadian federal government and has served as the Councillor for ITU since 1997. He has contributed extensively to the development and implementation of ITU's results-based management and accountability frameworks. He is a strong advocate for the integration

of strategic, financial and operational planning.

Bruce has served in a wide range of ITU positions, including Council Chairman in 2006, Chairman of the Administration and Management Committee at three plenipotentiary conferences, and, from 1999 to the present, as Chairman of the Council Working Group on Financial and Human Resources.

At the Sector level, he has served as Chairman, Radiocommunication Assembly, 2007; Chairman,

Radiocommunication Advisory Group (RAG), 2000–2007; Chairman, Telecommunication Standardization Advisory Group (TSAG), 2010 to the present; Chairman, Working Group of the Plenary, World Telecommunication Development Conference 2006.

Dr Gracie is the recipient of several awards, including the ITU Silver Medal for chairing the ITU Council in 2006, and the ITU Gold Medal for his work as Chairman of the ITU Radiocommunication Assembly in 2007.

Malcolm Johnson

United Kingdom



“ My top priority is to consolidate and build on the position of ITU as the leading global organization for telecommunications and information and communication technologies in order to facilitate the expansion and development of robust telecommunication and broadband networks, services and applications that promote social, economic and environmentally sustainable growth and development for all. ”



Interview with Malcolm Johnson

Candidate for the post of Deputy Secretary-General

What are your top three priorities for ITU and how do you see the Union's continued relevance in a hyper-connected world?

■ **Malcolm Johnson:** My top priority is to consolidate and build on the position of ITU as the leading global organization for telecommunications and information and communication technologies (ICT) in order to facilitate the expansion and development of robust telecommunication and broadband networks, services and applications that promote social, economic and environmentally sustainable growth and development for all.

Secondly, to continue to drive the reform of ITU: increase transparency, openness and inclusiveness; attract more industry members; and make ITU a more efficient organization that prioritizes its work, and uses its finite resources to greatest effect.

Thirdly, to further improve coordination and collaboration with other relevant organizations, especially those in the Internet community, so as to pool resources and efficiently deliver the benefits of the information society to all the world's citizens.

I am fully committed to assist the new Secretary-General meet these and other challenges, and place ITU in the best position to serve the global community in future years. Many of my initiatives as Director of the Telecommunication Standardization Bureau (TSB) — such as the conformance and interoperability programme; ICT and climate change; accessibility; and promoting academia membership — now cross all areas of ITU's work. I would do my utmost to coordinate their further implementation, in cooperation with the Bureaux Directors.

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ITU has a fairly unique tradition among international organizations of working by consensus. This can only be achieved if there is a willingness on all sides to compromise.

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The ITU membership traditionally takes decisions on the basis of consensus. What approaches have you used in the past to build consensus?

■ **Malcolm Johnson:** ITU has a fairly unique tradition among international organizations of working by consensus. This can only be achieved if there is a willingness on all sides to compromise. Consensus should not mean one side having to comply with the position of another side without receiving some benefit in return.

While I was leading the negotiations on behalf of Europe — within the European Conference of Postal and Telecommunications Administrations (CEPT) — at two very contentious world radiocommunication conferences, I stressed the mutual advantages of reaching consensus, and sought to develop solutions where every party felt that they had achieved an acceptable conclusion even if it was not their original desired outcome. The solution has to be workable and take account of all interests.

I will continue to promote consensus as the best means of avoiding polarization of the membership.

ITU's “federal” structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **Malcolm Johnson:** I have been a member of two teams of elected officials, and believe the federal structure with five elected officials has been very successful. The relationship between elected officials should be based on mutual trust and respect. Each has individual responsibilities but also a common responsibility towards the whole organization.

A frank and structured exchange of views and opinions is invaluable in reaching a wise conclusion. Once a conclusion



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Post of ITU Deputy
Secretary-General



is reached it is important that all the elected officials fully support it.

What do you see as ITU's aims in continuing to lead the World Summit on the Information Society?

■ **Malcolm Johnson:** The implementation of the WSIS Action Lines has been very successful and ITU is well placed to continue the process. The WSIS Forum in particular, and especially the recent WSIS+10 High-Level Event, have proved to be a great success in bringing together a wide range of stakeholders in an open and inclusive dialogue that allows an exchange of views in an informal environment and an opportunity to exchange best practices. WSIS helps ITU meet its mission to connect the world.

The United Nations post-2015 sustainable development agenda will address new challenges facing people and the planet. How should ITU contribute to shaping that agenda?

■ **Malcolm Johnson:** Information and communication technologies are now essential to all facets of business and socio-economic development. Increasingly,

the WSIS outcomes and the post-2015 sustainable development goals will have a symbiotic relationship. ITU should continue to push for information and communication technologies as enablers of global socio-economic benefits to be mainstreamed into the post-2015 goals. This would encourage increased investment in ICT projects in the developing world.

I have always promoted the use of ICT in this context, in particular by promoting the role of ICT in mitigating and adapting to climate change. Initially there was much scepticism about the role ICT can play, but over the years the importance of this work has become well recognized and extended to areas such as e-waste, smart water management, and smart cities.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **Malcolm Johnson:** Over the long history of ITU the major technological innovations have been the telephone, the television,

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On the horizon, nanotechnology has the potential to create nanonetworks connecting nanomachines, offering a wide range of new applications especially in the biomedical and environmental fields.

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and more recently the Internet. For the immediate future, the Internet of Things opens up vast opportunities through the connection of billions of devices, and together with big data and cloud computing, smart cities and other exciting developments will be enabled. The key will be reconfiguring the current legacy networks to take advantage of the technology on a global scale. On the horizon, nanotechnology has the potential to create nanonetworks connecting nanomachines, offering a wide range of new applications especially in the biomedical and environmental fields.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

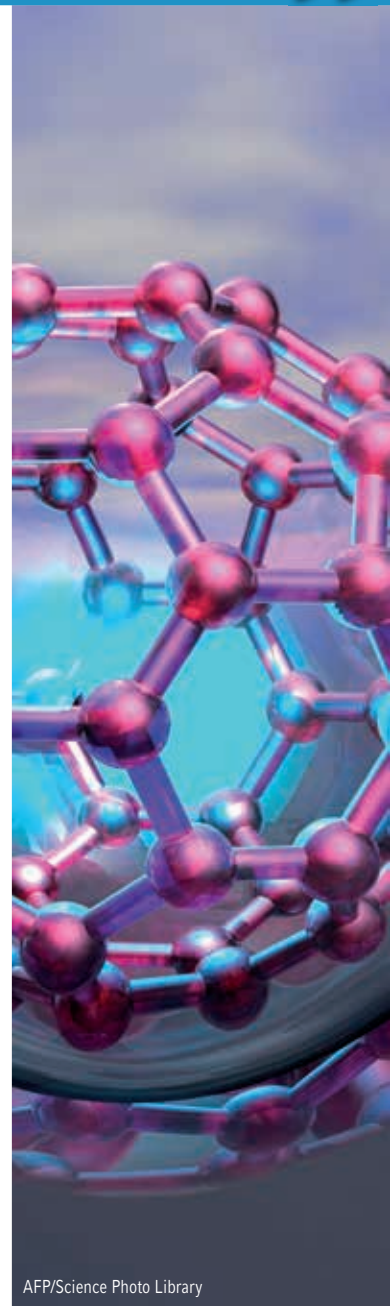
■ **Malcolm Johnson:** As ICT become more pervasive, and girls and boys acquire a curiosity at a young age, this interest will percolate through and result in an increasing number of women entering the profession. This has already been reflected in the number of women in the professional category in ITU. In TSB for example their number has increased significantly

in recent years to over 40 per cent. It will be necessary to continue to attract more women into senior positions in ITU, through workplace mentoring schemes and leadership training for example.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Malcolm Johnson:** During my time as TSB Director I have converted many senior posts to junior posts so as to bring in younger staff. These young, enthusiastic and highly motivated people drive new ideas and new activities, which can in turn attract more young people to participate in our work. An openness to youth has also attracted many interns to TSB for short periods and this has generated a spirit of energy and excitement in the work of the Bureau.

Frequent in-service training and an experience of a range of posts across the organization will, I believe, prepare young staff well for succession to senior management positions.



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Post of ITU Deputy
Secretary-General



People are a crucial part of any organization. What is your message to ITU staff?

■ **Malcolm Johnson:** ITU staff members are the lifeblood of the organization, and they are dedicated and talented. They make a tremendous effort to ensure that the organization continues to meet the requirements of its membership. This effort is much appreciated by ITU's

membership and by its senior management team.

I am committed to improve career planning and training, increase mobility and trust, and strive to keep ITU a desirable place to work, giving staff challenging and satisfying tasks, and the opportunity to contribute to the further social and economic development of the world in an increasingly important way.

> Short biography of Malcolm Johnson

Malcolm Johnson has been the Director of the ITU Telecommunication Standardization Bureau (TSB) since 1 January 2007, having been elected at the Plenipotentiary Conference in Antalya, Turkey, in 2006 (PP-06) and re-elected in 2010 at PP-10 in Guadalajara, Mexico. In this post, he spearheaded activities in cybersecurity, climate change and accessibility. He increased the involvement of developing countries and academia in ITU's standards activities, introduced free downloading of ITU-T Recommendations, and initiated a programme to address developing-country concerns over lack of interoperability and

conformity to ITU standards. He achieved a threefold increase in the activities of ITU's Telecommunication Standardization Sector without increasing its budget. Between 2003 and 2006, Mr Johnson was International Coordinator at the United Kingdom's Office of Communications (Ofcom), where he had lead responsibility for the United Kingdom in ITU and in CEPT. From 1992 to 2003, he was Director of the United Kingdom's Radiocommunications Agency and European Coordinator for WRC-93, WRC-95 and WRC-97. Between 1988 and 1992, he worked in the European Commission's

Telecommunication Regulations Division, where he represented the Commission in the Council of the European Union, EU Parliament, CEPT and ITU. Born in Trallwng, Wales, United Kingdom, on 19 June 1947, Mr Johnson graduated from the University of Wales, Cardiff, with MSc and BSc (1st class honours) degrees. He is a Chartered Engineer, a Fellow of the Institution of Engineering and Technology, and an Academician of the International Telecommunication Academy. He is fluent in English and French, and has some knowledge of Spanish. He is married, with one daughter.

Fatimetou Mohamed-Saleck

Mauritania



“ My priorities for ITU include good governance, capacity building and strengthening its framework as a forum for agreement on telecommunications and cooperation among its members... ”



Interview with Fatimetou Mohamed-Saleck

Candidate for the post of ITU Deputy Secretary-General



What are your top three priorities for ITU and how do you see the Union's continued relevance in a hyper-connected world?

Fatimetou Mohamed-Saleck: My priorities for ITU include:

- Good governance, capacity-building and strengthening its framework as a forum for agreement on telecommunications and cooperation among its members
- Achieving global development goals (growth, inclusion, sustainability and innovation)
- Preserving the Union's role as a driving and regulating force for innovation, while preserving the environment, diversity, future generations, human values and universal well-being.

In my opinion, the hyper-connected world and the growing stream of new issues that come with it make the Union's role even more relevant, particularly in terms of the collective thinking and proactive collaboration that is required on broadband and its corollaries, whether in the development, radiocommunication or

standardization domain. For example — helping developing countries bridge the divide through broadband.

The ITU membership traditionally takes decisions on the basis of consensus.

What approaches have you used in the past to build consensus?

Fatimetou Mohamed-Saleck: I start from the underlying values which the stakeholders have in common and areas of agreement between them. I rigorously apply collaborative principles: listening, openness, exchange, sharing and mutual respect. I prepare the matters on the table thoroughly beforehand, I ask pointed questions and I draw up carefully worded agendas so as to steer people as far as possible towards consensus solutions. Then, during the process, I give pride of place to a sense of common interest and principles of collaboration in discussions, in order to reconcile positions through persuasion and reason. When consensus proves hard to achieve, it is necessary to identify the main stumbling blocks and

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When consensus proves hard to achieve, it is necessary to identify the main stumbling blocks and negotiate every point, going back if necessary to even more fundamental shared values.

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negotiate every point, going back if necessary to even more fundamental shared values.

ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **Fatimetou Mohamed-Saleck:** There is no need to change a system that works, but simply to refine it, on the basis of critical analysis. This is the approach I would take to leverage ITU's unique structural characteristics for maximum impact. After all, this great institution with its three heads around the General Secretariat has steered a true course and proven itself through time.

Indeed, this organization, unique in terms of international governance, builds valuable bridges between the General Secretariat and the three converging areas of telecommunications. We need to continue developing these linkages while adapting to changes and upheavals brought about by ICT development.

What do you see as ITU's aims in continuing to lead the World Summit on the Information Society?

■ **Fatimetou Mohamed-Saleck:** The World Summit on the Information Society has indisputably been a global success, which is confirmed year upon year. To my mind, we must maintain this momentum while setting new objectives according to how the sector develops. To continue leading the Summit, ITU must make sure to foster fruitful exchanges among all stakeholders so as to find sustainable solutions to the big issues.



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Post of ITU Deputy
Secretary-General



The United Nations post-2015 sustainable development agenda will address new challenges facing people and the planet. How should ITU contribute to shaping that agenda?

■ **Fatimetou Mohamed-Saleck:** ITU has done a relatively good job in relation to the Millennium Development Goals that were set to be achieved by 2015, in comparison with the other United Nations bodies. Bolstered by this experience, it will be in a position to help shape the post-2015 agenda to meet universal concerns from a sustainable development perspective. It will have to focus more strongly on: (1) promoting green technologies and energy-efficient systems; (2) developing broadband using alternative energy sources and at an affordable cost for everyone; (3) fostering the development of innovative services such as those based on geolocation, smart cities and intelligent public services (electricity, water, health, education, and so on).

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation".

What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **Fatimetou Mohamed-Saleck:** Over the last 150 years, three innovations have to my mind visibly changed the face of the world: the telephone, television and the Internet.

Looking forward, the most significant innovation will no doubt stem from mobile broadband and its applications.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **Fatimetou Mohamed-Saleck:** In order to attract more women to management posts in ITU, the organization needs to do more in terms of policies to encourage this. In fact, will my own example not provide an incentive if I am elected?

To promote this objective worldwide, ITU will have to advocate to governments and Sector Members the adoption of a gender policy resolutely committed to training and encouraging girls to take up careers in the ICT sector.



Looking forward, the most significant innovation will no doubt stem from mobile broadband and its applications.



Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Fatimetou Mohamed-Saleck:** It would be a mistake not to take advantage of this creative genius and young people's passion for information and communication technologies. Youth represent the future! It is my intention to involve them strongly in ITU programmes, both inwardly within the organization and outwardly for the benefit of the world as a whole. In this regard, I will take pleasure in giving further impetus to the approach ITU has already adopted in this direction, and identifying other innovative actions.

People are a crucial part of any organization. What is your message to ITU staff?

■ **Fatimetou Mohamed-Saleck:** My message to the highly competent and devoted staff which constitutes ITU's main resource is that I will place staff at the very heart of the equation and work for their fulfilment and motivation. I will take my place as a member of the team and strive to encourage creativity, efficiency and diversity in a homogenous and interactive

system where every single person has his or her role to play in tackling, all together, the challenges facing the Union.

What has been the most rewarding moment in your professional life?

■ **Fatimetou Mohamed-Saleck:** In March 2000, when I was a young teacher at the University of Nouakchott, having recently settled in the Maghreb after 16 years in Europe where I had worked as a passionate ICT engineer in various multinationals, I was taken aback by the digital divide and dreamed of seeing the poor countries break free from their isolation and join the global information society.

So I embarked on a challenge, which few expert observers believed in, namely mobilizing government, the private sector and civil society to organize one of the first major events to promote Internet in Africa. It was such a popular and media success that it not only prompted a rush to get connected, but also, and most importantly, was to mark a watershed in making the public authorities aware of the strategic importance of the issue. So much so, that the government set up a completely new ministerial department which I had the honour to lead for four years.



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Post of ITU Deputy
Secretary-General



This was a great success and, today, thanks to my commitment, my name is systematically associated with the take-off of ICT in Mauritania and beyond. As a result, I have consistently been associated with international issues pertaining to the sector.

What personality has most influenced your way of seeing the world?

Fatimetou Mohamed-Saleck: Leonardo Da Vinci — a man of dreams, thought and writing; his practical yet creative way of looking at the world, his universality...

If you had to describe yourself in three words, what would they be?

Fatimetou Mohamed-Saleck: Openness, commitment and efficiency.

> Short biography of Fatimetou Mohamed-Saleck

Dr Fatimetou Mohamed-Saleck is currently head of an IT company and an international expert in telecommunication/ICT development policies. In parallel, she is a professor at the University of Nouakchott. She is known for having been the first Secretary of State for New Technologies of Mauritania from 2000 to 2004. She has 24 years' experience in both the public and private sectors in several areas of activity, all related to information and communication technologies: 6.5 years on the international scene + four years in charge of a ministerial department + 18 years in university circles + 2.5 years

in the financial sector + 10 years in the management of various companies and international consulting. Dr Mohamed-Saleck has performed numerous consultancy and technical and institutional assistance missions in Mauritania, in the Arab and African subregion and with international organizations (ECA, UNDP, UNECA), regulatory authorities, administrations, the private sector and civil society. She has worked with ITU for many years and in various domains (such as e-government, Cisco academies, promoting girls in ICT and universal access to ICT).

Dr Mohamed-Saleck holds a PhD in applied mathematics obtained in 1994 from the University of Paris IX — Dauphine, and a degree in IT engineering obtained in 1990 from ENSEIHT (École nationale supérieure d'électronique, d'électrotechnique, d'informatique, d'hydraulique et des télécommunications — an engineering school in Electrical Engineering, Electronics, Computer Science, Hydraulics and Telecommunications at the Toulouse National Polytechnic Institute, France). She is 47 years old. She speaks French, Arabic and English and harbours a passion for cultural diversity.

Shola Taylor
Nigeria



“ ITU’s continued relevance in a hyper-connected world should primarily focus on providing the platform for global interaction in all matters relating to ICT. ”



Interview with Shola Taylor

Candidate for the post of ITU Deputy Secretary-General



What are your top three priorities for ITU and how do you see the Union's continued relevance in a hyper-connected world?

■ **Shola Taylor:** Let me clarify at the outset that I am standing for the post of Deputy Secretary-General, whose duties are clearly defined in the Constitution. It is the Secretary-General who sets the ITU priorities. Nevertheless, consistent with my campaign brochure, I would, if elected as Deputy Secretary-General, propose three priorities to the Secretary-General which are derived from my understanding of the membership's needs and which fall within the core functions of the ITU. These are:

- Promoting affordable access to information and communication technologies (ICT) for all citizens of the world.
- Enhancing collaboration to reinforce existing strategic partnerships between ITU Member States, Sector Members and other stakeholders to promote a common vision and shared understanding on ICT issues; these include broadband infrastructure deployment,

universal access to the Internet, cyber-security including child online protection, gender equality, and disaster and environmental management.

- Ensuring effective and transparent implementation of the Union's strategic and financial plans with linkages to the operational plans of the three Sectors and the General Secretariat. This will involve optimization of the activities of the Sectors, implementing cost-reduction measures without sacrificing quality, and adopting innovative mechanisms to mobilize additional resources and a realistic plan to cover the Union's long term After-Service Health Insurance liabilities.

ITU's continued relevance in a hyper-connected world should primarily focus on providing the platform for global interaction in all matters relating to ICT.

The ITU membership traditionally takes decisions on the basis of consensus.

What approaches have you used in the past to build consensus?

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Two guiding principles that I have found useful in all of my experiences are the compelling need to be empathetic and respectful of the views of the different parties, as well as to be impartial and transparent in dealing with disputes.

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Shola Taylor: I have been privileged to serve in several leadership positions in my 30+ years of professional experience in the information and communication technology sector, which provided me with opportunities to broker consensus on a variety of issues in various work environments.

Two guiding principles that I have found useful in all of these experiences are the compelling need to be empathetic and respectful of the views of the different parties, as well as to be impartial and transparent in dealing with disputes. Once this atmosphere of trust is established, some key approaches become relevant:

1. Clearly defining the issues at stake, including desirable outcomes
2. Understanding the concerns of all the parties by ensuring equitable participation
3. Formulating principles that find common ground among those involved, thereby facilitating consensus.

ITU’s “federal” structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

Shola Taylor: To leverage this structure for maximum impact, I would support efforts to promote greater coordination among the Sectors and strengthen capacity building to enable each Sector to respond adequately and efficiently to the needs of all ICT stakeholders. I would also support strengthening ITU’s regional presence, which is a key strategy to reach out more effectively to Member States and to promote a coordinated ITU presence.

I will work with the Secretary-General and other elected officials to ensure the successful implementation of ITU strategic and financial plans and the efficient management of ITU.



AFP

Post of ITU Deputy
Secretary-General



What do you see as ITU's aims in continuing to lead the World Summit on the Information Society?

■ **Shola Taylor:** WSIS outcomes have been beneficial in pursuing the sustainable development agenda by the international community. ITU's aims in continuing to lead WSIS should be to leverage the visibility and leadership gained in the process to pursue the goal of bridging the digital divide, particularly through continued deployment of broadband, and by promoting the utilization of ICT as a cross-cutting tool for social and economic development.

The United Nations post-2015 sustainable development agenda will address new challenges facing people and the planet. How should ITU contribute to shaping that agenda?

■ **Shola Taylor:** As indicated in my brochure, ITU can contribute to shaping the post-2015 agenda by ensuring that information and communication technologies are seen as an engine of economic growth and a major contributor to sustainable development. ITU should also promote some development issues that were inadequately addressed in the pre-2015

agenda, for example the ageing population. Other issues include affordable access to ICT, Internet governance, special needs, matters of concern to least developed countries, small island developing States, land-locked countries and gender-related issues.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **Shola Taylor:** There have been so many significant technological innovations that it is difficult to choose only three. However, in my opinion three outstanding innovations are the development of radio frequency communication, the invention of the computer and the development of the Internet along with the World Wide Web. I believe the most significant technological innovation on the horizon is big data, given the value-added proposition that it brings with it.

I believe the most significant technological innovation on the horizon is big data, given the value-added proposition that it brings with it.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

Shola Taylor: As part of the policy on inclusiveness, ITU should continue to engage its constituents to promote inclusion of more women in ICT activities, including at the ITU itself. The Union should be a champion in continuing to promote ICT-related activities for women and girls through partnerships with other ICT/gender stakeholders to empower women to take more leadership positions. These actions are needed at the national, regional and international levels.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

Shola Taylor: I would build on current ITU initiatives for youth empowerment to enhance their creativity by working with governments and other development partners to create programmes and incentives at the local, regional and international levels, which would enable young people to interact with others in the ICT arena, provide their ideas for ICT development and become involved in ICT projects.

People are a crucial part of any organization. What is your message to ITU staff?

Shola Taylor: As a former ITU staff member, I fully recognize the competences and skills of the ITU staff and I value them as the main assets of the Union. My message to ITU staff members is to continue to be professional and efficient in their work. If elected, I would work very closely with ITU staff and other elected officials towards ensuring that ITU continues to fulfil its mandate and meet membership expectations. I would encourage an attractive work environment for ITU staff in which their views are taken into consideration.

What has been the most rewarding moment in your professional life?

Shola Taylor: I had the singular privilege to serve as Project Director for seven years at the ITU to direct a comprehensive needs assessment analysis and network options for telecommunications including broadcasting for 50 African countries. I directed the work of the Geneva-based project team, about 600 experts based across 50 African countries and two large consultancy firms.



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Post of ITU Deputy
Secretary-General



After concluding this successful project, African Ministers adopted the report by a standing ovation in the presence of the then Secretary-General Pekka Tarjanne, myself and other ITU officials. After the ceremony, Dr Tarjanne came up to me and said “this is excellent; I am very proud of you”. That was one of my most rewarding moments.

What personality has most influenced your way of seeing the world?

■ **Shola Taylor:** Nelson Mandela — simply for his inspiring vision of the bigger picture, his firm belief in change and recognition of equal treatment for every citizen of the world, a philosophy which can be applied in the provision of affordable ICT for every global citizen.

If you had to describe yourself in three words, what would they be?

■ **Shola Taylor:** Visionary, Listener, Result-oriented.

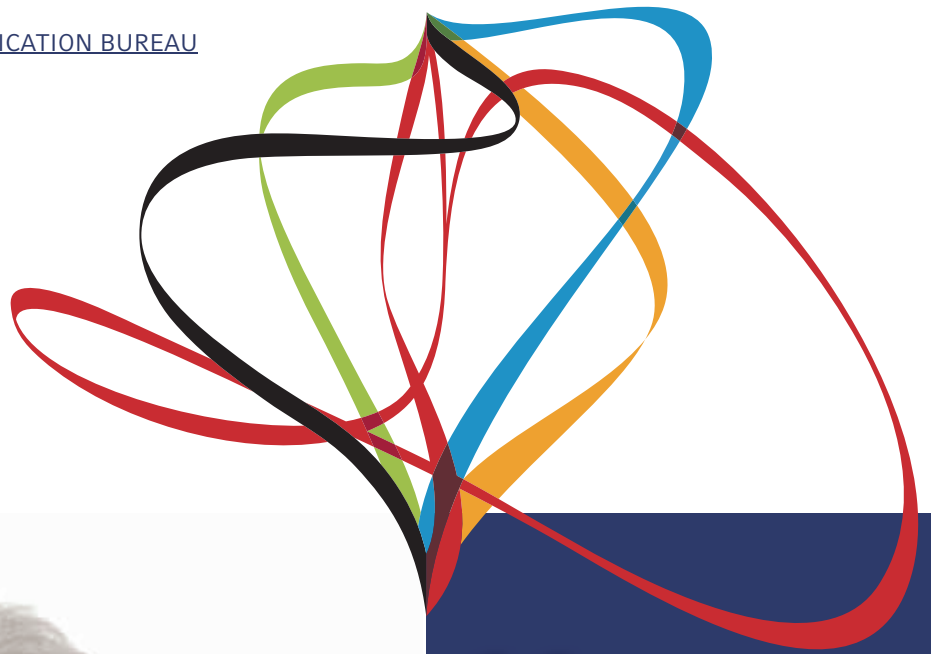
> Short biography of Shola Taylor

Shola Taylor has over 30 years of experience in the information and communication technology sector, both in the public and private sectors. He earned his BSc in Electrical/Electronic Engineering and MSc in Telecommunication Systems in the United Kingdom in 1979 and 1981, respectively. Some positions held by Mr Taylor are highlighted below:
At national level he was Senior Telecom Engineer, NITEL Nigeria; Board Member/Commissioner, Nigerian Communications

Commission; and lead Expert on elaboration of ICT Policies and Regulation. At regional level he was Coordinator, African Telecom Think Tank; WRC Technical Coordinator for Africa; Commissioner, NEPAD e-Africa Commission; Adviser to ICT Ministers in Nigeria, Rwanda and South Africa; and ICT Adviser to African Development Bank, MTN and other international organizations. At international level he was Spectrum Engineer, INTELSAT, Washington DC;

Project Director, ITU Geneva; Regional Director for Africa, Inmarsat UK; and ITU Expert on ICT policy, regulatory and infrastructure issues. He was twice elected by the ITU as Member of the Radio Regulations Board and became Board Chairman in 2005. He also served as Chairman of Committee 5B of WRC-12. Mr Taylor has received several awards including the ITU Silver Medal, and he has a deep understanding of the diverse needs of the ITU membership.

François Rancy
France



“ I intend to further strengthen the role played by the Radiocommunication Bureau in accordance with ITU’s fundamental principles and in close collaboration with its other Sectors and the Radio Regulations Board. ”



Interview with François Rancy

Candidate for the post of Director of the ITU Radiocommunication Bureau



What are your top three priorities for the Radiocommunication Sector?

■ **François Rancy:** If re-elected, I intend to further strengthen the role played by the Radiocommunication Bureau in accordance with ITU's fundamental principles and in close collaboration with its other Sectors and the Radio Regulations Board. We will aim to work closely with the membership in the following areas:

- help governments and regulators to make the best decisions about spectrum and prevent harmful interference. To this end, the Bureau will provide greater support to the specific needs of individual countries;
- apply ITU procedures fairly to all;
- continue to improve the alignment between the databases of the ITU Radiocommunication Sector (ITU-R) and actual spectrum use;
- facilitate access to these databases by upgrading the Bureau's information system;

- promote wider participation in the work of the Radiocommunication Sector and better publicize its results;
- ensure the Radiocommunication Bureau is run in a transparent manner and promote best management practices.

ITU will hold a World Radiocommunication Conference in 2015. What in your view are the three key issues that will dominate the agenda?

■ **François Rancy:** There are many such issues. However, the discussions on Agenda Items 1.1 and 1.2 concerning the mobile allocations and global identifications for International Mobile Telecommunications (IMT) can be expected to be the most challenging. The large amount of spectrum required and the candidate bands which are under discussion for this purpose mean that a



Mobile allocations and global identifications for International Mobile Telecommunications can be expected to be the most challenging issues at the World Radiocommunication Conference in 2015. Another key issue concerns additional allocations to the fixed-satellite service...



number of radiocommunication services could be affected by the conference decision. The discussions on these agenda items are therefore likely to be very difficult. These discussions are also the ones which may have the highest impact on everybody's life in the future, since they are key in the development of mobile broadband in the next twenty years.

Another key issue is under Agenda Item 1.6, which concerns additional allocations to the fixed-satellite service, in order to enable this service to respond to the continuous growth in traffic demand. Discussions on this item are likely to be difficult to ensure compatibility with incumbent services in the frequency bands considered.

Another key issue is under Agenda Item 1.17, which addresses the requirement for wireless avionics intra-communications and should have a significant impact on the aviation industry for providing lighter and safer control systems. This issue, however, should be less

controversial than the previously mentioned ones.

ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **François Rancy:** This structure is actually the strength of ITU: it allows each Sector to concentrate on its role together with its stakeholders, while the General Secretariat focuses on the issues of common interest. For ITU-R, close cooperation with regional and sectoral organizations is a key element in achieving our respective strategic goals. The last four years have shown the strong leveraging



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Post of Director of the ITU Radiocommunication Bureau



power of that cooperation in preparing world radiocommunication conferences, promoting spectrum harmonization, transitioning to digital television or allocating the digital dividend, and more generally responding to the requirements of the membership on the use of spectrum. The spectacular development of mobile broadband is one of the most visible outcomes of this cooperation.

In order to work properly, this unique structure however requires a good deal of coordination between the Sectors and the Bureaux. Together with my fellow elected officials in the Telecommunication Standardization Bureau and the Telecommunication Development Bureau, we have worked very closely during the last four years to strengthen this aspect. This “one ITU” approach is now well

integrated in the practice of all Sectors and the General Secretariat.

ITU’s 150th anniversary in 2015 will be celebrated under the theme “Telecommunications and ICTs: Drivers of Innovation”. What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **François Rancy:** I would say telephone, radio and television broadcasting, and satellites for the first 130 years of that period. They have largely contributed to making the world a global village by eliminating distances and providing instant coverage

> Short biography of François Rancy

François Rancy is the Director of the ITU Radiocommunication Bureau, holding that post since 1 January 2011. Until then, he was Director-General of France’s Agence Nationale des Fréquences (ANFR) — the National

Frequency Agency. From March 1997 until October 2004, he served as ANFR’s Director for Spectrum Planning and International Affairs. He was previously Head of the Frequency Bureau of France Telecom and Head of radio research

studies in the France Telecom Research Centre. François Rancy graduated from Ecole Polytechnique in 1977 and Ecole Nationale Supérieure des Télécommunications (Paris) in 1979.



The most significant evolution on the horizon is towards a global mobile network integrating the Internet of Things into ubiquitous broadband access.



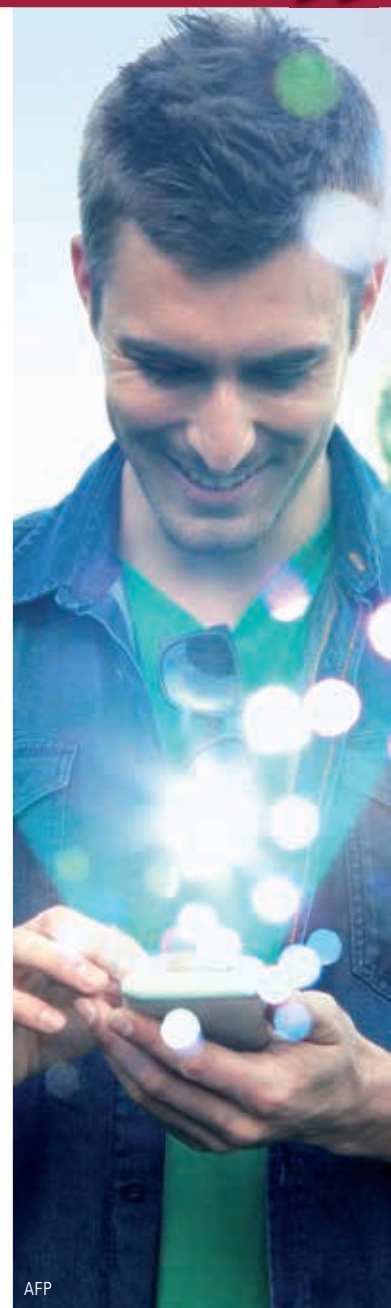
of anything that happens in the world. But if you look at the last 20 years only, I would say mobile telephony, Internet and mobile broadband have brought and are bringing even more fundamental changes. Mobile telephony has delivered 7 billion subscriptions in 20 years, a revolution in terms of connecting almost everybody on the planet. Until then, the “global village” was just a few hundred million people. Over the same period, Internet has changed our life in most of its aspects. Mobile broadband is now on track to bring the Internet revolution to virtually everybody in the world, paving the way for a knowledge society open to all.

The most significant evolution on the horizon is towards a global mobile network integrating the Internet of Things into ubiquitous broadband access.

It has already started, but “5G”, which is currently being addressed by ITU-R Study Group 5 under the generic name of IMT-2020, will clearly provide the ground for this. The work of ITU-R to support its affordable and sustainable development by adequate spectrum allocations and harmonization will be a key enabler in this regard.

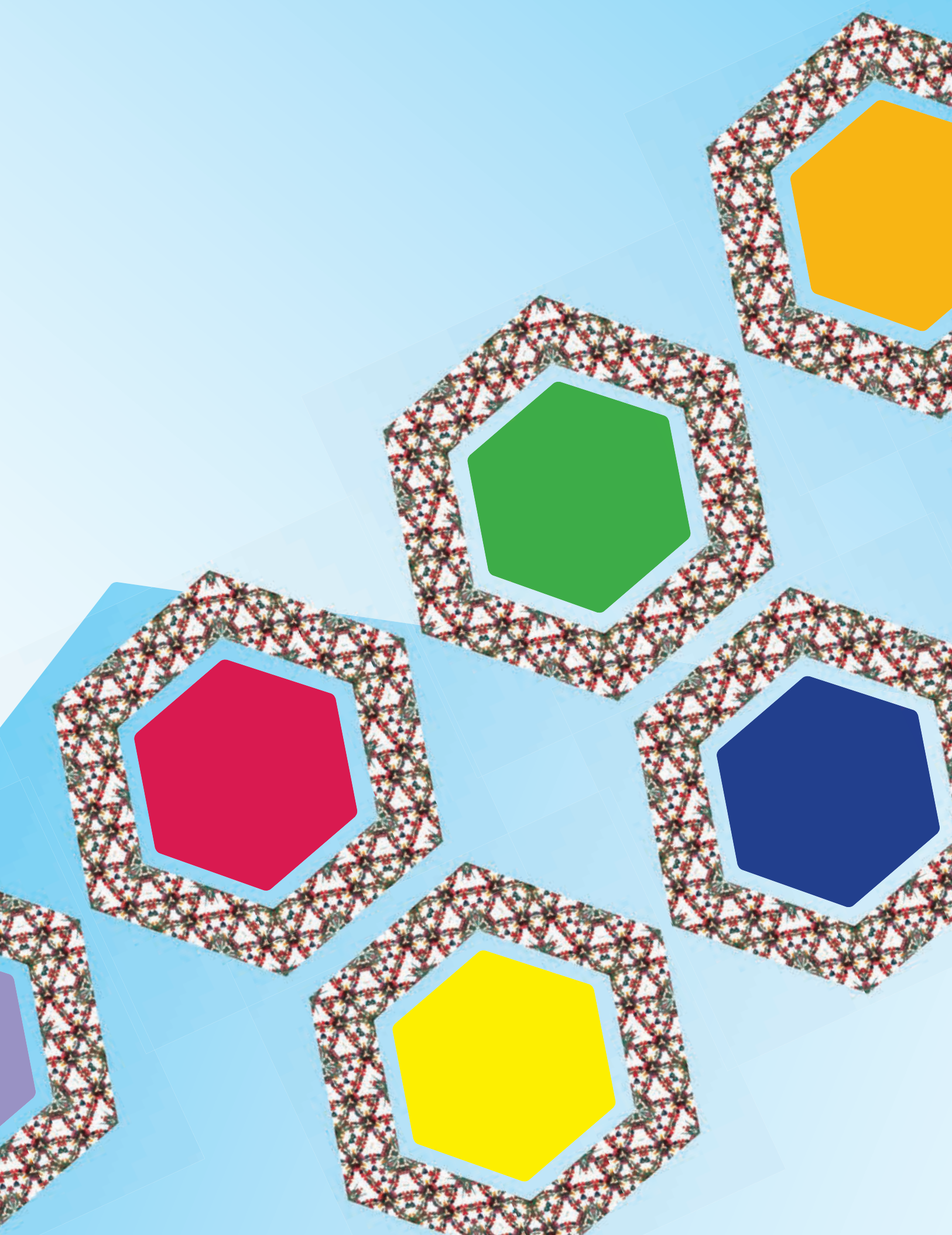
What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **François Rancy:** The ICT field is very technical in many aspects. I therefore believe that we need the education systems in the world to produce more women engineers.



AFP

Post of Director of the ITU
Radiocommunication Bureau



Ahmet Erdinç Çavuşoğlu

Turkey



“ The
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My priorities will be
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Interview with Ahmet Erdinç Çavuşoğlu

Candidate for the post of Director of the ITU Telecommunication Standardization Bureau

What are your top three priorities for the Telecommunication Standardization Sector?

■ Ahmet Çavuşoğlu:

The Telecommunication Standardization Sector is at the heart of our daily lives, providing solutions and standards to technical complexities and new technologies. My priorities will be twofold. The first set of priorities can be described as membership priorities. In this group of priorities, my top priority will be to overcome the digital divide. I think this is the most important and honourable task for any manager in ITU. In this respect, I attach great importance to bridging the standardization gap between developed and developing nations. I believe that enhanced participation of developing countries would enable us to reflect the needs and interests of the developing world in the international ICT standards-setting processes. Another item on my agenda will be cybersecurity. I think that

ITU-T has an important role in building confidence and security in the use of ICTs. Climate change and environment-related matters are also gaining momentum globally. In this regard, the Telecommunication Standardization Bureau (TSB) can play a significant role in addressing environmental challenges through improving energy efficiency, promoting smart water management and cutting e-waste.

My second set of priorities would be the institutional priorities for the TSB secretariat. I will focus on efficient and effective working methods and standards-making processes. Our aim should be to make TSB the “pole star” in the field of telecommunication standardization. We should make sure that the work of ITU-T and its secretariat (TSB) is a dependable reference.

I have an ambitious plan to realize my goals and I’ve already started working on the way forward. I’ve established a team of experts and I started developing projects to be ready to do the job when

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Machine-to-machine communications are the future of the global digital economy. And TSB is at the heart of this issue. Besides, cloud computing should have a considerable place in our agendas.

”

the time comes — and of course if the Member States elect me as TSB Director. The demand for solutions is constantly increasing and I do not wish to lose time in the formulation phase.

What trends and issues are emerging that you feel will have an impact on standard-setting work within ITU? And how should ITU respond in order to remain the pre-eminent global standards body?

■ **Ahmet Çavuşoğlu:** Communication has been a fundamental part of human life and this has been growing rapidly with the phenomenal evolution and development of communication tools and technologies. Parallel to this, convergence of technologies has changed the telecommunications and ICT environment radically in the last decades. Next-generation networks are the most basic example of this. ITU-T has

a key role in this environment to set international standards to ensure interoperability of ICT networks and devices across the globe. Machine-to-machine (M2M) communications are the future of the global digital economy. And TSB is at the heart of this issue. Besides, cloud computing should have a considerable place in our agendas.

TSB should dedicate its prominent human resources to these emerging issues. I plan to give more attention to innovation and new technology watch. I believe that TSB, should be more active in collecting and disseminating information, and briefing the ITU-T membership on new technologies. To this effect, I will explore the possibilities. I will work in consultation with all stakeholders and of course, the support of membership both in terms of expertise and funding will be indispensable. Also, the views of the private sector should be taken into consideration in the standards-setting process.



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Post of Director of the
ITU Telecommunication
Standardization Bureau



ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **Ahmet Çavuşoğlu:** The leaders of ITU have managed to sustain ITU's general harmony and at the same time the independent initiatives of all Sectors. We have learned so much from them. I believe harmony is the vital ingredient for success. I will act in mutual understanding and good faith with all other ITU elected officials and ITU staff. I believe that we should cherish ITU's traditional structure and amend it to respond to the challenges of tomorrow.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world?

And what do you see as the most significant technological innovation on the horizon?

■ **Ahmet Çavuşoğlu:** After the telegram, the first game changer in this sector was radiocommunication. It changed both interpersonal and mass communications. More recently, mobile communications has been a revolution that we have all witnessed. The Internet has transformed the global economy and business practices, as well as people's daily habits. On the horizon, I see M2M communications changing the economy just the way Internet did. I think M2M applications will bring a new momentum to the sector as fixed and mobile markets approach saturation point.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **Ahmet Çavuşoğlu:** Gender balance is an important topic in the work-place. We have more women in the telecommunication workforce than in the past. ITU has taken action in recent years to address this topic and encourage women to make careers in ICT, for example

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On the horizon, I see M2M communications changing the economy just the way Internet did.

”

through its “Girls in ICT” initiative. This is very promising and I support the recent actions taken, especially by the General Secretariat. However, frankly speaking we should admit that there are still very few women in leadership positions. Being aware of this, I will attach great importance to employing women at every level.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Ahmet Çavuşoğlu:** Youth is one step ahead of us, as digital natives. We have to attract them and meet their needs. It is unfortunate to observe that they are mostly unaware of what ITU has to offer and what ITU is capable of. We need to reach out to them and to involve them in the work of ITU. I think that providing scholarship and internship programmes for students in ICT-related disciplines, and organizing contests, could increase young people’s familiarity with ITU and encourage them to participate in its work.

People are a crucial part of any organization. What is your message to ITU staff?

■ **Ahmet Çavuşoğlu:** ITU staff is the Union’s most valuable asset. It is their intelligence and efforts that sustain this organization in a fast-changing environment. I will make every effort to benefit from their expertise. Their job satisfaction and their happiness are key parameters. I am looking forward to working with them.

What has been the most rewarding moment in your professional life?

■ **Ahmet Çavuşoğlu:** It is not so easy to indicate only one moment as the most rewarding out of a professional life of 22 years. Being elected as the Chairman of the ITU Council in 2012 and being put forward by my government as a candidate for the post of Director of TSB are among the most rewarding moments.



BSIP/AFP

Post of Director of the
ITU Telecommunication
Standardization Bureau



What personality has most influenced your way of seeing the world?

■ **Ahmet Çavuşoğlu:** Throughout my career, I have looked to Mahatma Gandhi as an inspiration. Gandhi showed how someone could win allegiance, “not merely by the cunning game of political fraud and trickery, but through the living example of a morally exalted way of life”. He embodied a transformational change and was one of the few men in history to fight simultaneously on moral, religious, political, social, economic, and cultural

fronts. His message touched the hearts of so many because it was a universal message. I believe this is the sort of attitude that we strongly need these days.

If you had to describe yourself in three words, what would they be?

■ **Ahmet Çavuşoğlu:** I would prefer to specify three main pillars that I believe in and adhere to at all times. These are: “honesty”, “hard work” and “good will”. ■

> Short biography of Ahmet Erdinç Çavuşoğlu

At the international level, Dr Ahmet Erdinç Çavuşoğlu was Vice-Chairman of the Regional Preparatory Meeting for Europe in 2013 for WTDC-14, Chairman of the ITU Council in 2012 and Vice-Chairman in 2011. He was Vice-Chairman of the ITU Council Working Group on a Stable ITU Constitution. He is currently a Vice-Chairman of the Council's Committee on ITU's 150th Anniversary.

He has broad experience in leading international discussions, negotiating contracts and resolving conflicts at the International Chamber of Commerce. He represented Turkey's Information and Communication Technologies Authority (ICTA) in several international meetings and conferences as head or deputy head of delegation. Since 2010, Mr Çavuşoğlu has been Head of the International Relations Department of ICTA. From 2008 to 2009,

he was Regulatory Coordination Expert for ITU. He served as ICT Expert at ICTA from 2001 to 2010, and as Legal Expert and Lawyer at the Undersecretariat for Defence Industries from 1993 to 2001. Mr Çavuşoğlu was born in Turkey in 1969. He graduated from the Faculty of Law, Istanbul University, in 1991, and received LLM and PhD degrees from Istanbul University in 2002 and 2007, respectively. He is married, with two children.

Bilel Jamoussi

Tunisia



“ My top priorities are to make ITU-T the most attractive and responsive international standards-development organization for the ICT sector with a focus on relevance, quality and speed; accelerate the process towards bridging the standardization gap between developed and developing countries; and strengthen cooperation with other relevant standards-development organizations. ”



Interview with Bilel Jamoussi

Candidate for the post of Director of the ITU Telecommunication Standardization Bureau

What are your top three priorities for the Telecommunication Standardization Sector?

■ **Bilel Jamoussi:** My top priorities are to:

- Make ITU-T the most attractive and responsive international standards-development organization for the information and communication technology (ICT) sector with a focus on relevance, quality and speed.
- Accelerate the process towards bridging the standardization gap between developed and developing countries, in close collaboration with the Telecommunication Development Sector.
- Strengthen cooperation with other relevant standards-development organizations with a focus on the intersection of ICT with the vertical sectors (for example, health care, banking, transport and utilities).
- Enhance the transfer of innovation to standards and the participation of Academia in ITU-T.

What trends and issues are emerging that you feel will have an impact on standard-setting work within ITU? And how should ITU respond in order to remain the pre-eminent global standards body?

■ **Bilel Jamoussi:** As reported by the Global Standards Symposium 2012 of which I led the preparations, the intersection of ICT with the vertical sectors requires strengthening collaboration with other ICT standards-development organizations and forging new relationships with the verticals.

The work of the ITU-T Review Committee (RevCom) is very important in seeking ITU membership input on how to best address the changing environment and the challenges ahead. I had the privilege to serve as the secretary of the committee that led to the creation of RevCom at the World Telecommunication Standardization Assembly in 2012 (WTSA-12) and to serve as counsellor for this very important committee since its creation.

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The work of the ITU-T Review Committee is very important in seeking ITU membership input on how to best address the changing environment and the challenges ahead.

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ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **Bilel Jamoussi:** Emerging areas of standards development require close collaboration with ITU-R to ensure respect of frequency allocations and reduced risk of interference, as has been done for the smart grid narrowband power line communication standards for example.

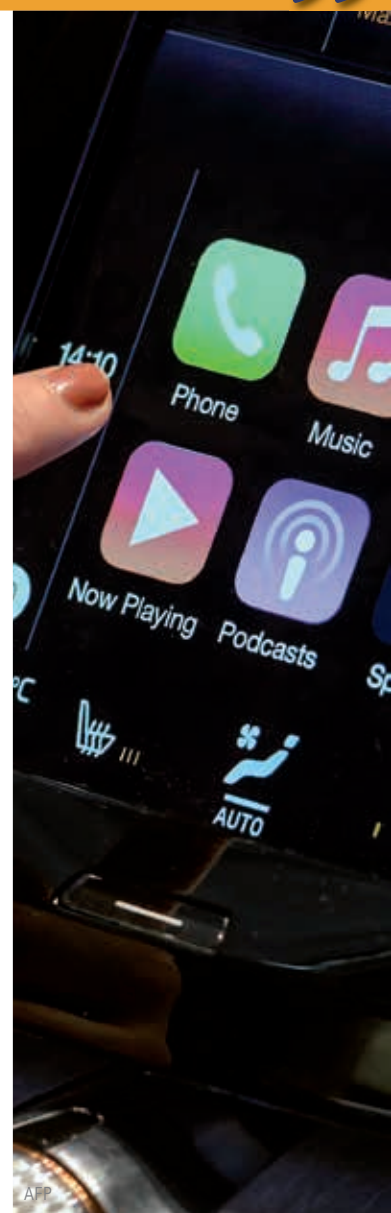
With the rapid evolution of technology and standards, it is imperative to work very closely with ITU-D in order to meet the capacity-building objectives and quickly develop the appropriate regulatory enabling environment.

During my five years in ITU, I had the honour of representing the Director of the Telecommunication Standardization

Bureau (TSB) at times in the Management Coordination Group composed of the five elected officials and the deputy directors; this experience gave me a unique perspective on how to best leverage the ITU federal structure.

ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **Bilel Jamoussi:** ICT touch all aspects of our lives and cut across various fields. Innovation will be in the intersection of telecommunications and ICT with other sectors. For example, the recent ITU-T Focus Groups address issues of innovation in the digital financial services where ICT are used to bring banking services to the poor; another example is the Focus Group



Post of Director of the ITU Telecommunication Standardization Bureau



on flight monitoring and aviation cloud where ICT are used to increase flight safety.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **Bilel Jamoussi:** ITU has a good record of gender balance and is moving in the right direction. For example, under my leadership, the TSB Study Groups Department has in fact increased the number of its women counsellors and enabled them to take on increased leadership roles.

Our outreach to universities is critical in bringing young women engineers to ITU. Many of the ITU/TSB interns who are selected among the Academia members have greater chances of joining ITU or other ICT employers.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Bilel Jamoussi:** ITU Academia membership is very important in bringing youth to know about ITU very early in their careers. Our investment in standards education in ITU and in the Institute of Electrical and Electronics Engineers (IEEE) is bearing fruit as many universities have added standards courses to their curricula.

In addition, our increased use of social media is helping ITU tap into the communication channel of the youth.

People are a crucial part of any organization. What is your message to ITU staff?

■ **Bilel Jamoussi:** Over the past five years, I have been fortunate to work with so many bright and hard-working colleagues in ITU in various formations: as supervisor and manager; as collaborator in the major ITU conferences and assemblies; or as a member of the joint advisory group and various commissions of inquiry.



ICT touch all aspects of our lives and cut across various fields. Innovation will be in the intersection of telecommunications and ICT with other sectors.



As Director of TSB, I will continue to treat colleagues with respect and fairness, have an open door policy, listen to their concerns and address their needs, be sensitive to our cultural diversity, and energize the team to deliver the best services to the ITU membership.

Together we will continue to innovate on all fronts as we have done for example when I hosted the first World Café in the TSB Study Group Department on 7 April 2011, now used across all ITU in brainstorming on strategic topics; or when I led the development of the direct document posting project, now used and appreciated by members and staff as it increases efficiency and makes contributions instantly accessible.

What has been the most rewarding moment in your professional life?

■ **Bilel Jamoussi:** Among the memorable moments of my professional life, I remember with pride the day I was awarded a full scholarship, based on merit, to study Computer Engineering in the United States in 1985, and when I was selected as Distinguished Engineer at Nortel in 2008

— only 8 colleagues were honoured with that distinction among 25 000 engineers.

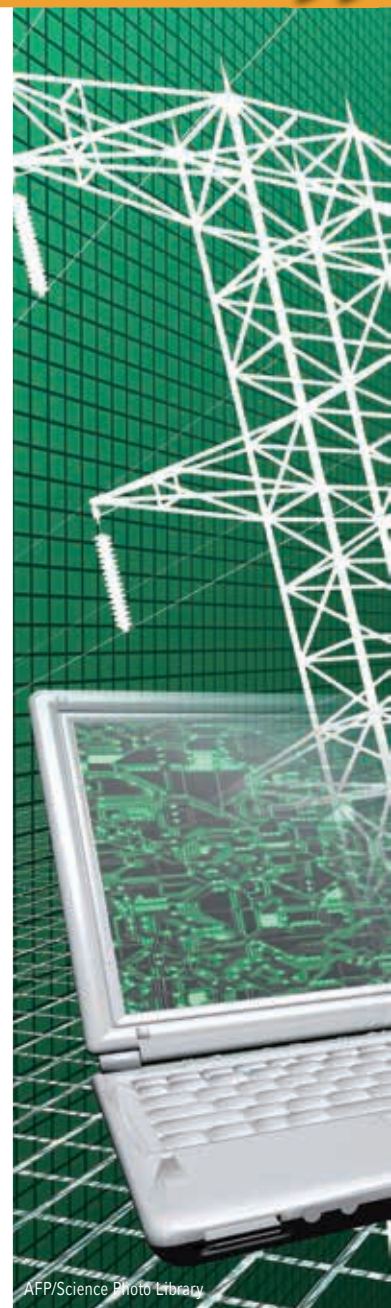
Perhaps the most rewarding moment was when I was appointed as Chief of the Study Groups Department — selected from about 250 applicants worldwide.

What personality has most influenced your way of seeing the world?

■ **Bilel Jamoussi:** At different phases of my life I had different idols. While growing up in Tunisia, the hard work and commitment to success in life, to freedom, dignity and integrity of my parents (Nouri and Majida Jamoussi), and many of my schoolteachers, marked my youth.

The North American pragmatic approach to problem solving, a strong work ethic and commitment to excellence marked my higher education and early professional years.

In ITU, the late Mohamed Mili (ITU Secretary-General from 1967 to 1983) and Hamed Chaabouni (ITU Cairo Office founder for the Arab region) were inspirational in terms of their love of ITU, their humility, and their dedication to serving others.



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Post of Director of the
ITU Telecommunication
Standardization Bureau



If you had to describe yourself in three words, what would they be?

■ **Bilel Jamoussi:** Leader, Innovator, Diplomat.

> Short biography of Bilel Jamoussi

An engineer and manager, multilingual standardization expert and holder of 22 patents, Tunisian born Bilel Jamoussi has been Chief of the Study Groups Department of the ITU Telecommunication Standardization Bureau (TSB) in Geneva, Switzerland, since 2010.

Dr Jamoussi has led the coordination of the Bureau's standards, moving activities into a new era characterized by the need for increased collaboration with vertical

sectors such as health care, transport, utilities and banking.

Key achievements under his tenure have been important new standards, while effectively managing staff by recruiting new talent, improving gender balance, delivering new work methods, and staying within budget.

Prior to 2010, Dr Jamoussi worked in the private sector for 15 years in North America. As Director of Standards, he managed more than 50 staff and the

company's participation in more than 90 standards organizations.

In the Internet Engineering Task Force (IETF), he authored a number of Internet standards. As an IEEE Senior Member, he was elected to the IEEE Standards Association Board of Governors and to its Corporate Advisory Group.

He holds BSc, MSc and PhD degrees in Computer Engineering from Pennsylvania State University, United States. He is fluent in Arabic, French and English, and speaks some Spanish and German.

Chaesub Lee
Republic of Korea



“ The fundamental and essential function of the Telecommunication Standardization Sector (ITU-T) should be to produce standards (ITU-T Recommendations) that are worthwhile for all members of ITU. To achieve this, I believe you can summarize the priorities as value, action and techno-competence. ”



Interview with Chaesub Lee

Candidate for the post of Director of the ITU Telecommunication Standardization Bureau

What are your top three priorities for the Telecommunication Standardization Sector?

■ **Chaesub Lee:** The fundamental and essential function of the Telecommunication Standardization Sector (ITU-T) should be to produce standards (ITU-T Recommendations) that are worthwhile for all members of ITU. To achieve this, I believe you can summarize the priorities as value, action and techno-competence.

Value means producing better quality standards effectively and efficiently.

Action includes proactively investigating issues needing international involvement and initiating the timely development of standards, taking into account the needs of developing countries as well as harmonization with other relevant standards organizations.

Techno-competence means providing a high-end working platform that will enable a truly global discourse between members and participants, and better facilitate the development of world-class standards for

telecommunications and information and communication technologies (ICT).

What trends and issues are emerging that you feel will have an impact on standard-setting work within ITU? And how should ITU respond in order to remain the pre-eminent global standards body?

■ **Chaesub Lee:** Convergence has been a defining factor for many years and, in the short term, as telecommunications and ICT become more pervasive we need to better embrace the vertical integration factor.

The current study group system is horizontally focused, examining standardization from a technology perspective but without properly taking into account the intended destination of the technology. Think of e-health, e-banking, smart cities, and so on. Standards need to be developed with these sectors specifically in mind, and this will demand a more mission critical and time sensitive approach. Thus flexibility is required in

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Think of e-health, e-banking, smart cities, and so on. Standards need to be developed with these sectors specifically in mind, and this will demand a more mission critical and time sensitive approach.

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terms of development and harmonization. To respond to this new environment, ITU-T should build on the solid foundation of its study groups and develop new mechanisms to augment the existing system.

From a long-term perspective, ITU-T should investigate and develop relevant standards for an even more advanced information society. This means taking into account principles of trust and creativity. The information society is continuously evolving with new features that are not only fomenting a knowledge society and social good, but also a burgeoning dark side. Cybercrime could significantly undermine the credibility and development of telecommunications and ICT, and I believe that ITU should take a leading role in envisioning a future knowledge society that is trustworthy and good, and that ITU-T standards should contribute to this. There will be a great deal of creative thinking required to keep up with innovation on both the light and the dark sides.

ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

■ **Chaesub Lee:** ITU focuses on all aspects of telecommunications and ICT: policy and regulation, technology and deployment, fixed and mobile. The core role of ITU-T should be to provide capabilities based on technology and standards for further enhancements of mobile and deployments led by the other two Sectors — ITU-R and ITU-D. Those capabilities should also contribute to the identification of policy and regulatory guidelines dealt with in the General Secretariat. As a member of the management team, the TSB Director should enforce these features and strengthen collaboration with the other Sectors as well as the General Secretariat to ensure the unity of the Union.



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Post of Director of the
ITU Telecommunication
Standardization Bureau



ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world? And what do you see as the most significant technological innovation on the horizon?

■ **Chaesub Lee:** For all of the following, ITU has played a significant role. I believe that, in another 150 years, future generations will be able to make the same claim for the technologies that will shape our future.

Digitization — the switch from analogue systems to digital — has contributed to the more widespread availability of telecommunications to the general public, and also data communication (Recommendation ITU-T X.25) and telematics (G2/G3 Facsimile standards).

Mobile has fostered the extension of telecommunications from the household to the individual, which was a key innovation and a truly great step towards ITU's objective to "connect the world". The continuing potential of mobile in developing countries is still far from being realized.

Broadband has raised the quality of connectivity from simple text and voice to a truly multimedia environment. This was the innovation that shifted the world from an industrially-based society to the information society. Broadband over fixed or mobile networks is now acknowledged as essential for sustainable development and to promote and enhance economies and the quality of human life.

Smart technologies, that is technologies that enhance efficiency while reducing human intervention, should be considered the next most significant innovation on the horizon. Virtualization and context-based communication are important examples. While today, these are being developed at the network level, development will soon be extended to various device functions, including services and applications.

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Smart technologies, that is technologies that enhance efficiency while reducing human intervention, should be considered the next most significant innovation on the horizon.

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What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **Chaesub Lee:** The gender issue is critical in ITU's road map. To bring more women into leadership positions in ITU, we also need to tackle the wider problem of women experts in ICT. For its part, ITU's organization of and involvement in various programmes including "Girls in ICT Day" and the "Global Network of women ICT decision-makers" have significantly raised the profile of this issue. A continued and proactive approach to attract women experts will help gain gender parity in the organization, while also significantly contributing to value and credibility.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Chaesub Lee:** The most important thing here, especially as far as standardization is concerned, is education. At the simplest level, this means gaining wider understanding of the fact that without standards you couldn't use the Internet or make a

telephone call. If there is better acknowledgement of the fundamental importance of standards, there will be more interest. Providing opportunities to attend ITU events offers an important stepping stone. Also worth exploring are the joint development of scholarships with industry partners, open internships for assisting standardization activities and traineeships within the Bridging Standardization Gap programme.

People are a crucial part of any organization. What is your message to ITU staff?

■ **Chaesub Lee:** ITU is dealing with telecommunications and ICT, the most innovative and the fastest developing sector in the world today. It clearly influences every area of commerce and humanity. This is an enormous responsibility. I applaud the ITU staff's ability to provide state-of-the-art knowledge on the issues that face this hugely important sector. I believe there is a strong foundation to build a team where proactive harmonization with all other players allows ITU to continually improve services to the members in terms of value, efficiency, effectiveness and transparency.



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Post of Director of the
ITU Telecommunication
Standardization Bureau



What has been the most rewarding moment in your professional life?

■ **Chaesub Lee:** In 1994, the Republic of Korea's Information Infrastructure plan was developed under the leadership of the government to prepare the ground for Korean ICT over the next 15 years. Six experts from several organizations, including myself, were invited to develop

this plan. The completion of the implementation of the plan was achieved in 2010. It was a pivotal framework for the country's ICT landscape. Having participated in the development of this plan and observing the results has been one of the most rewarding moments in my professional life.



> **Short biography of Chaesub Lee**

Chaesub Lee started his professional life in 1986 as a researcher at Korea Telecom. After 17 years he started work at the country's Electronics and Telecommunications Research Institute (ETRI), where he stayed for the next eight years. He is now working at the Korea Advanced Institute of Science and Technology (KAIST) and as a senior advisor to the Korean

Ministry of Science, ICT and Future Planning (MSIP). He has been involved in the telecommunication and ICT standardization field for 27 years, since 1987, specializing in areas such as integrated services digital networks (ISDN), global information infrastructure (GII), Internet protocol, next-generation networks (NGN), Internet protocol television (IPTV) and cloud computing.

Mr Lee served as Vice-Chairman of ITU-T Study Group 13 from 2001 until 2008, and was a co-Chairman of the ITU NGN Focus Group and a Vice-Chairman of the ITU IPTV Focus Group. He is now Chairman of ITU-T Study Group 13, a position he has held since 2009. Mr Lee is married and has two children. He holds a PhD in Multimedia Engineering.

Brahima Sanou

Burkina Faso



“ Among my top priorities are to leverage the potential of telecommunications and ICT to empower development in other sectors of the economy; strengthen partnerships and cooperation with key stakeholders of the ICT ecosystem and promote an environment that is conducive to private-sector investment and socio-economic development for all... ”



Interview with Brahim Sanou

Candidate for the post of Director of the ITU Telecommunication Development Bureau

What are your top three priorities for the Telecommunication Development Sector?

■ **Brahima Sanou:** The Telecommunication Development Sector works to improve people's lives by contributing to building a truly inclusive information society. We promote the use of information and communication technologies (ICT) to enhance development everywhere, including in rural and remote areas, through implementing the Dubai Action Plan approved at the World Telecommunication Development Conference earlier this year.

Telecommunications and ICT are not just an end in themselves, but are the key enablers of social, economic and environmental progress. To achieve the goal of an inclusive information society, my top priorities for the Sector are thus to:

- Leverage the potential of telecommunications and ICT to empower development in other sectors of the economy
- Strengthen partnerships and cooperation with key stakeholders of the ICT ecosystem and promote an

environment that is conducive to private-sector investment and socio-economic development for all

- Strengthen the critical role of ICT in disaster prevention and response, get more women and young people interested in taking part in the ICT world, and pay due attention to people with disabilities and specific needs to help achieve digital inclusion.

What do you see as the challenges and opportunities in implementing the Dubai Action Plan?

■ **Brahima Sanou:** The Dubai Action Plan sets out a road map for the next four years and defines our work, actions and objectives. It offers the greatest opportunity ever to make the world a better place by improving people's lives, empowering people through ICT to enhance their own social and economic well-being. The Dubai Action Plan needs to mean something to people. For this reason, we need to turn it into reality.

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The Dubai Action Plan sets out a road map for the next four years and defines our work, actions and objectives. It offers the greatest opportunity ever to make the world a better place by improving people's lives, empowering people through ICT to enhance their own social and economic well-being.

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The success of our work also depends on how well we embrace results-based management, a methodology now being implemented throughout the United Nations system. I am a firm believer in the benefits of results-based management as it will help us strengthen accountability and transparency. It will also help us identify measures to further improve our long-term delivery and results. By shifting the focus from activities to achievements, we can increase the impact of the work we do.

Strengthening the capacity of the Telecommunication Development Bureau and its regional presence, while streamlining our financial and human resources will also be critical over the next four years. The aim is to optimize our resources to support the achievement of our objectives, taking a cost-effective approach in implementing our activities.

ITU's "federal" structure — the General Secretariat along with the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors — is unique in international governance. How do you intend to leverage this structure for maximum impact, while ensuring the unity of the Union?

Brahima Sanou: From my field experience, what is most important for the membership is not the Telecommunication Development Bureau, the Telecommunication Standardization Bureau or the Radiocommunication Bureau, but rather the timely delivery of ITU products and services. Each Sector brings something unique to the Union, yet our areas of work are closely inter-related. I will continue to strengthen the synergies in all our activities in order to streamline the use of resources and achieve greater impact.



Post of Director of the
ITU Telecommunication
Development Bureau



ITU's 150th anniversary in 2015 will be celebrated under the theme "Telecommunications and ICTs: Drivers of Innovation". What in your view are the three innovations in this industry that have most changed our world?

And what do you see as the most significant technological innovation on the horizon?

■ **Brahima Sanou:** Mobile phones, social media, and "applications" (or Apps) are among the main innovations that have most changed the world. Our recent statistics indicate that by the end of 2014, mobile-cellular subscriptions will reach almost 7 billion, there will be nearly 3 billion Internet users, two-thirds of them coming from the developing world, and the number of mobile-broadband subscriptions will reach 2.3 billion globally. The apps market is already leading the way to new communication behaviours, opening the door to innovative business models. It is striking that the first billion downloads of one app took just nine months.

Looking to the future, I am sure that the provision of reliable mobile tele-connectivity will open up new models of social

and economic development. Improved access to mobile technologies and innovative services such as m-payments, m-education, m-health and m-government can be life-changing for individuals, communities and societies at large.

What needs to be done to bring more women into leadership positions, both in ITU and in the ICT sector as a whole?

■ **Brahima Sanou:** Gender equality is central to achieving our vision for social and economic development. Our campaigns, such as Girls in ICT Day and the Women's Digital Literacy Campaign, launched in 2011, have been key contributors to achieving equal opportunities for women. Through them, we are encouraging young women and girls to prepare for and pursue an ICT career. If we can enable girls and young women to fulfil their potential through education and equal access to ICT, entire societies will benefit, and so will their economies.

Currently, in the Telecommunication Development Bureau, the gender composition of permanent and fixed-term staff is 74 women to 67 men. Long gone are the days when our women colleagues



Improved access to mobile technologies and innovative services such as m-payments, m-education, m-health and m-government can be life-changing for individuals, communities and societies at large.



only served in supportive roles. We have moved forward towards managerial and strategic roles for women staff based on their professional skills, an approach that in my view is critical to the development of the Bureau. We will certainly continue on this path.

Young people are avid and creative users of information and communication technologies. How will you involve them in ITU?

■ **Brahima Sanou:** Young people are the most enthusiastic users of ICT. They are the ones who will shape the future direction of the ICT industry. We need to listen to their needs and concerns, and address them.

ITU has a long history of involving young people, and helping them to become entrepreneurs and launch ICT careers. That's why I am proud to be the patron of the Young Innovators Programme at ITU Telecom World events. I am also fully engaged in empowering youth through initiatives such as my flagship m-Powering Development initiative, which seeks to harness the power of mobile phones to promote education, commerce, health, sport and more.

People are a crucial part of any organization. What is your message to ITU staff?

■ **Brahima Sanou:** People, and their motivation and inspiration, are the force behind our success. To me, it is important that staff are valued, motivated and encouraged. Everyone needs to feel that he or she has an important role to play in achieving our results. In my discussions with the staff of the Bureau, I often paraphrase Mahatma Gandhi's words to remind my colleagues to "Be the change they want to see in the Telecommunication Development Bureau and the world."

What has been the most rewarding moment in your professional life?

■ **Brahima Sanou:** I have had many rewarding moments: reflecting at the end of each day on our accomplishments is rewarding. I have always felt privileged to be part of a dynamic team and to be able to contribute to improving people's lives. For this reason, I consider that every single moment of my career has been rewarding.



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Post of Director of the
ITU Telecommunication
Development Bureau



What personality has most influenced your way of seeing the world?

■ **Brahima Sanou:** Many people I have met in my life have influenced me in the way I see the world. Most of them are not known personalities, but simple people whom I have encountered — sometimes only briefly. Many of them are not even aware of how deeply they have inspired me. I continue to learn from everyone

I have the chance to meet, or whose words I read, in order to fine tune my way of seeing the world.

If you had to describe yourself in three words, what would they be?

■ **Brahima Sanou:** Serve Beyond Myself. ■

> Short biography of Brahima Sanou

Brahima Sanou has been Director of the ITU Telecommunication Development Bureau (BDT) since January 2011, following his election at the Plenipotentiary Conference in Guadalajara, Mexico, in 2010. Mr Sanou has focused particularly on mobilizing resources and knowledge-sharing by forging collaborative, cross-sectoral multistakeholder partnerships. Key elements include: the m-Powering Development Initiative; the Smart Sustainable Development Model initiative; and the ITU Academy. As Head of the ITU Regional Office for Africa and Liaison Officer to the African

Union and the United Nations Economic Commission for Africa (UNECA) from 2000 to 2010, Mr Sanou fostered the growth of mobile telecommunications across the continent through the establishment of policy and regulatory frameworks nationally and regionally. As coordinator of the African regional project on telecommunication reforms and of the General Agreement on Trade in Services (GATS) from 1997 to 2000, he pushed for human resource development and capacity building in Africa. He began his professional career in his native Burkina Faso, where he held several

high-level positions in the Posts and Telecommunications Administration, and was instrumental in the liberalization of the national telecommunication sector. Mr Sanou holds a degree in Engineering from the Ecole Nationale Supérieure des Télécommunications (ENST) in Paris, and a post-graduate diploma from the Centre for Financial, Economic and Banking Studies, also in Paris. Fluent in French and English, he is married with three children.





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▶ **ITU launches campaign to attract 150 Academia members for its 150th anniversary**

*By Houlin Zhao,
ITU Deputy Secretary-General*



Houlin Zhao

In 2015, ITU will celebrate its 150th anniversary under the theme "Telecommunications and ICTs: Drivers of Innovation". Recognizing the role of academia in innovation, ITU is launching a campaign with the aim of attracting a total of 150 Academia members in 2015.

Some 80 academic institutions from across the world have joined ITU since 2011, following the decision of the Guadalajara Plenipotentiary Conference in 2010 to enable universities and research establishments to join ITU in their own right, subject to approval by their national administration.

A win-win partnership

Beyond the purely technical interest that academic and research institutions have in the work of ITU, their participation gives them a unique opportunity to contribute their expertise to solving the regulatory challenges of broader public policies related to information and communication technologies (ICT). This surely augurs well for the development of mutually beneficial and constructive partnerships with manufacturers, operators and public authorities in the field of ICT.

ITU's activities span cutting-edge technologies. Working with the Union therefore gives academic and research institutions multiple opportunities to increase their technical knowledge. Looking to the future, membership of ITU enables these institutions to contribute to global standards and best practices.

For example, a contribution from Chemnitz University of Technology, Germany, on video quality was approved as an ITU Telecommunication Standardization Sector (ITU-T) Recommendation in March 2013.

Beijing University of Posts and Telecommunications has, since 2011, submitted more than 50 contributions to ITU-T Study Group 13 (Future networks including cloud computing, mobile and next-generation networks).

Academia members can also become editors or rapporteurs of ITU documents. Experts from *Universidad del País Vasco* (the University of the Basque Country), Spain, regularly submit contributions to ITU-T Study Groups 11 (Signalling requirements, protocols and test specifications) and 12 (Performance, quality of service and quality of experience).

High-profile ITU events

Participating in high-profile ITU events helps academic and research institutions raise their profile globally. ITU-T leads the organization of our annual flagship Kaleidoscope event for academia, technically co-sponsored by the Institute of Electrical and Electronics Engineers (IEEE). Kaleidoscope brings together researchers, government and industry to share their views on future information and communication technology networks and services. Academia can submit paper proposals through the conference double-blind, peer-review process.

Selected papers are published in the proceedings and in the IEEE Xplore Digital Library, with top papers being included in a special edition of IEEE Communications Magazine. Waseda University, Japan, for

example, has been particularly active in the Kaleidoscope conferences. The university is on the Kaleidoscope's Steering Committee. Two of its PhD students presented and won the best paper award at Kaleidoscope 2011; one PhD student presented at Kaleidoscope 2013; and two PhD students presented at Kaleidoscope 2014.

International Girls in ICT Day, celebrated every year on the fourth Thursday in April, has also attracted the interest of academia. For example, in Malaysia, the ITU-UUM (*Universiti Utara Malaysia*) Asia-Pacific Centre of Excellence for Rural ICT Development celebrated International Girls in ICT Day on 24 April 2014. The event was attended by more than 260 female students. This one-day programme of activities received positive feedback from the students, who felt really excited at the prospect of becoming ICT experts in the future.

Sharing expertise

ITU membership not only allows academic and research institutions to share their expertise, but also gives them access to training and specialized seminars, as well as to world-leading ICT statistics.

ITU's Telecommunication Development Sector (ITU-D) has more than 60 Centres of Excellence designed to build capacity in all regions of the world, many of them in partnership with academic institutions. These centres provide highly specialized

ICT-related training for policy-makers, regulators, industry and academia.

Academia members are interested in contributing to and learning from ITU. For example, the Telecommunication Standardization Bureau (TSB) Director's Ad hoc Group on Education about Standardization was established on the basis of a proposal from Denmark's Aalborg University to the Telecommunication Standardization Advisory Group in 2012. Experts from this university are active in the group. The university also co-organized and hosted a workshop on standards education in October 2012. Another example is the work of Georgia Institute of Technology (Georgia Tech), United States, in co-organizing and chairing an ITU workshop on "Internet of Things — Trends and Challenges in Standardization" in February 2014 at ITU headquarters.

Publishing articles in *ITU News* is a way of sharing expertise with a wide readership, and several Academia members — for example Georgia Tech and Brazil's *Centro de Pesquisa e Desenvolvimento em Telecomunicações* — have contributed papers. Waseda University coordinated the publication of 13 articles by authors from Academia members in the December 2013 edition of *ITU News* themed, "Innovating for society". Beyond sharing knowledge, such publications also raise the profile of the institutions concerned.

Academia and innovation

Universities train the engineers and business people who will shape the future of the information and communication technology sector. ITU engages with this group of innovative thinkers, builders and change-makers from all parts of the world to help the entire membership update their policy and regulatory regimes, as well as technical standards, to reflect emerging trends.

Through research and development activities, and partnerships with industry to commercialize new ideas, academia plays an essential role in innovation. Being part of ITU brings academia into a world forum where they can engage in global and regional debates.

Remote participation

Most ITU study groups have some form of remote participation, so it is now possible for country experts to participate in the technical work of the Union without having to incur travel expenses. By strengthening remote access, ITU aims to widen participation in its activities, especially among under-represented developing and least-developed countries. In a bold move, the Government of Argentina has announced that it will fund, for a limited period, Academia membership for some of the country's universities

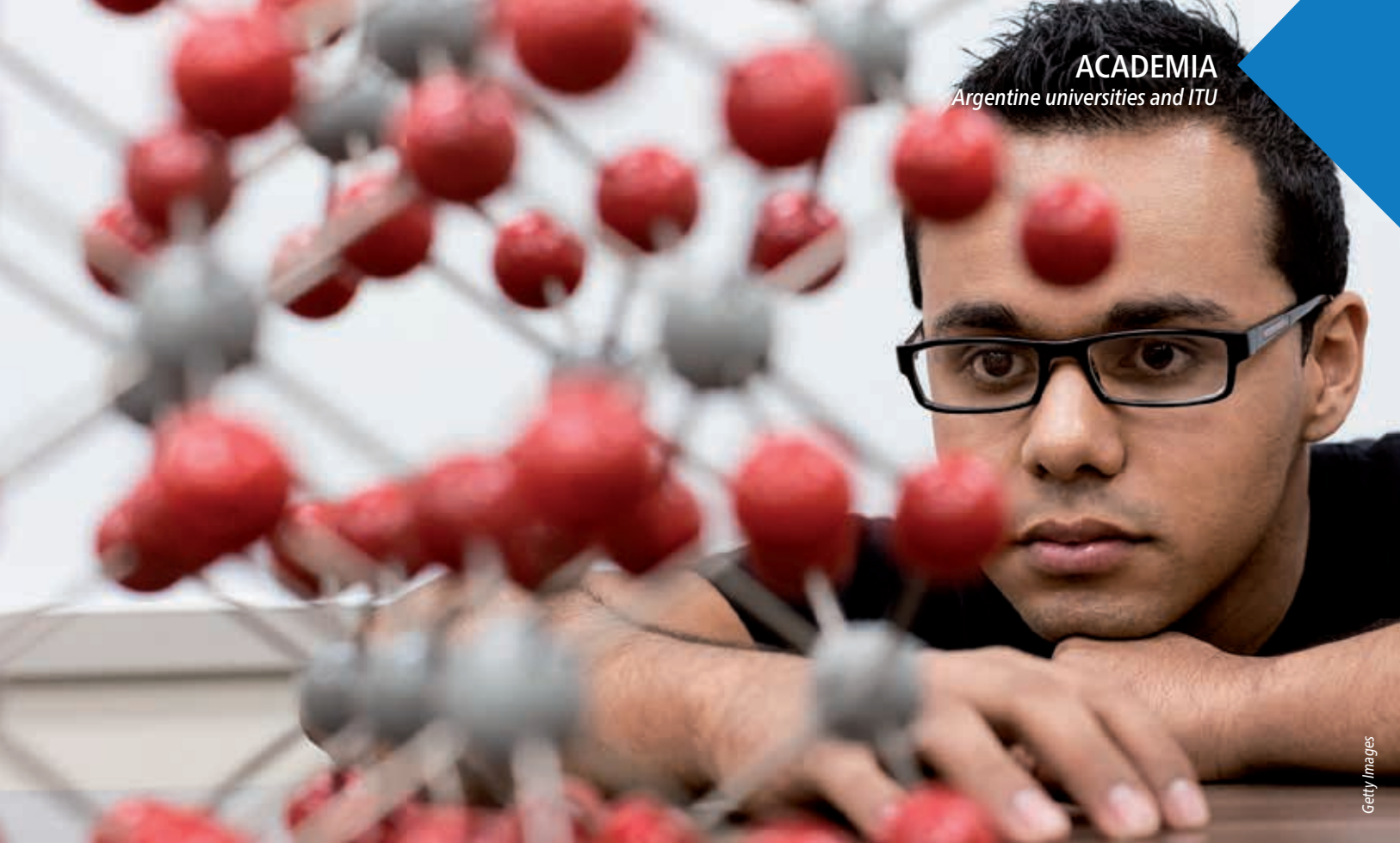
— 17 universities have already registered for this support.

Looking ahead

Academia members can strengthen ITU in leveraging the power of telecommunications and information and communication technologies to continue the quest for knowledge, innovation and prosperity. The ITU platform allows academic and research institutions to participate in the development of global standards, build relationships with regulators and industry from around the world.

A recent example is the ITU Academy event on "Fostering Innovation and Partnerships in Human Capacity Building: Enhanced Engagement of Academia in the International Telecommunication Union", held in Prague in April 2014. At this meeting, Academia members and the ITU Academy agreed on a plan to forge stronger collaborative relationships in capacity building. The plan envisages the joint development and delivery of training programmes, as well as awarding internationally recognized accreditation for some of the programmes on offer.

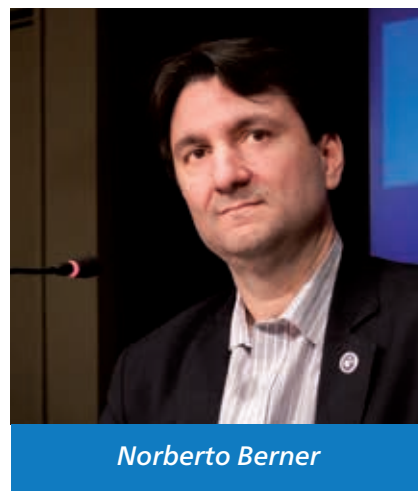
By strengthening the participation of Academia in our work today, we are expanding the horizons and potential of our Union for decades to come. ■



▶ **Argentine universities and ITU**

*By Norberto Berner,
Secretary of Communications, Argentina*

Universidades Argentinas en la UIT (Argentine universities and ITU), an initiative of Argentina's National Communications Secretariat, aims among other things to promote the involvement of Argentina's academic institutions in the development of future telecommunication standards, build national capacity in this area, enhance Argentina's active involvement in ITU's work, and promote efforts to strengthen ITU activities.



Norberto Berner

Argentina's universities

The history of Argentina's universities dates back to the foundation of the National University of Córdoba in 1613. Argentina's institutions of higher education have since had a long and illustrious history, producing five Nobel laureates to date (two for medicine, one for chemistry, and most recently two for peace).

Academia and the communications sector

We could cite many examples of the way in which Argentine universities have made use of new technology over the past decades. For instance, the use of multimedia content for medical training started to take off with the advent of cinematography.

The practice of filming surgical operations for teaching purposes and subsequent viewing by urban medical practitioners was started by Dr Alejandro Posadas at the end of the 19th century and continues to this day, using Internet protocol (IP) applications such as video on demand. Copies of such films can be found in the Medical Sciences Faculty of the National University of Buenos Aires and on the *CD La Telesalud en Las Américas* — a joint publication by ITU, the Inter-American Telecommunication Commission (CITEL) and the Pan American Health Organization (PAHO).

Also in the field of health care and closer to our own time, on 1 August 1950

María Eva Duarte de Perón opened the Seventh International Congress on Surgery. This event was notable for the way in which surgical operations performed during the congress were broadcast on television to audiences in different lecture halls, even before the official launch of television broadcasting services in Argentina. Public television broadcasting made its debut one year later, on 17 October 1951 (the "Day of Loyalty"), in the *Plaza de Mayo* in Buenos Aires.

Such audiovisual innovation continues in our own time, with the Open Digital Television (*Televisión Digital Abierta*) project, an integral element of Argentina's digital inclusion policy. This is a television platform that uses the most up-to-date digital technology to transmit high-quality images and sound, free of charge, and to provide other interactive services.

The Laboratory for Research and Information on Advanced Information Technology (LIFIA), part of the National University of La Plata, has been actively participating since 2009 in research and development work on software products and services for the Open Digital Television project. New developments include Ginga.ar, a "middleware" package for running interactive digital television applications, as well as the development of various applications for this platform and associated university and enterprise training initiatives.

Another highlight is the involvement of the National University of San Martín,

through the Institute for Environmental Research and Engineering, in the pilot project for continuous monitoring of non-ionizing radiation. This project is being implemented with ITU's support by the National Communications Secretariat and has been the basis for promoting Recommendation ITU-T K.83 in our region.

Education policy

Since 2003, Argentina has increased the proportion of its gross domestic product (GDP) devoted to education from 3 to 6.5 per cent. It is worth noting that Argentina is among the countries of the Americas with the highest levels of access to university education in public institutions.

As a result of our higher education policy, the universities have been transformed into a motor for upward social mobility and are regarded as a public asset that must be accessible to all citizens as a right.

Between 2003 and 2013, 12 new universities were founded throughout the country, improving access to higher education through better geographical distribution. This has provided us with a range of indicators suggesting an increase in both the amount and quality of university education in a system that is increasingly inclusive, enabling more people to benefit from higher education. Other indicators of this progress are the

expansion of the student bursaries system and periodic evaluation and certification by the National Commission for University Evaluation and Certification.

One of the goals of the current model of university development is to ensure that higher education is more effectively geared to national and regional requirements, especially those of the production and employment-creating sectors, social economy organizations, local governments, and small-and medium-sized producers. With this goal in mind, we are implementing the Strategic Engineering

Training Plan for 2012–2016, which is intended to promote the development of engineering training programmes in brownfield areas.

The current reform of the existing model of higher education combines integration of teaching, research and technology with the strategic plans for agriculture and food production, industry, and science and technology, among others.

It is this policy that provides the overall framework for the “Argentine universities and ITU” initiative.

Argentina’s role in ITU

Argentina has played a leading role in ITU ever since the founding of the Union. On 1 January 1954, Marco Aurelio Andrada became the first Secretary-General of ITU from the Americas region.

Our active participation in the Council, Radio Regulations Board and various study groups of ITU’s three Sectors — Radiocommunication, Telecommunication Standardization and Telecommunication Development — as well as the ongoing organization of joint projects in our region, all attest to Argentina’s deep



commitment to strengthening the world's lead organization for telecommunications.

Following on naturally from this, our support for Resolution 169 at the Plenipotentiary Conference in Guadalajara, Mexico, in 2010, is now being given concrete expression through the "Argentine universities and ITU" initiative. An agreement recently concluded in this respect with the Telecommunication Development Bureau provides for the affiliation and participation in the Union's activities of at least 20 national universities.

Argentine universities and ITU

The goal of the "Argentine universities and ITU" initiative is to build high-level specialized capacity in information and communication technologies (ICT) by promoting the involvement of Argentina's higher education sector, its universities and its research institutes, in areas of relevance to the three ITU Sectors.

Participation in the work of ITU will create opportunities for academic and

research institutions to become more aware of the broader regulatory challenges in public ICT policy, going beyond purely technical concerns, and to develop mutually beneficial associations between manufacturers, operators and public authorities in the ICT sphere.

This will also enable institutions of higher education and research to participate in the development of global standards, establish relations with regulators and industries throughout the world, and exchange views, knowledge and experience with a wide range of stakeholders in both the developed and developing world.

The institutions involved in this project will be able to participate in all the disciplines of relevance to the work of ITU, including electronic engineering, industrial engineering, computing science, medicine, law and economic sciences. This will contribute to the development of ICT across the full range of applications in the various specialized fields of the institutions concerned.

It also means that small companies developing innovative products will be able to play an active part in developing

standards applicable to those products, through the intermediary of some of the participating academic institutions.

Argentina's Communications Secretariat will coordinate the activities of these institutions within ITU, in the light of each institution's specialized fields of study. With that aim in mind, the research and educational institutions foreseen in the project will be affiliated to ITU's three Sectors, and funding will be provided to cover the cost of their participation in the work of those Sectors.

Through the project, we hope to develop the specialized human resources that will in the near future contribute to the growth of Argentina's academic and production sectors and ultimately enhance the greatness of our nation.

We hope that other countries in Latin America and the Caribbean will join us in this initiative, which will surely help us to build the "greater homeland" that inspired the heroes of our struggles for independence. ■

► Interview with Professor Yang Zhen

President of Nanjing University of Posts and Telecommunications, China

Could you tell us something about Nanjing University of Posts and Telecommunications?

Professor Yang Zhen: Nanjing University of Posts and Telecommunications was established (as Nanjing Institute of Posts and Telecommunications) in 1958, although it can trace its origins back to 1942 when it was an institution that provided training for officials of the General Postal Administration. Its present name was conferred in 2005.

As a key provincial university with a focus on engineering, Nanjing University of Posts and Telecommunications specializes in information technology and telecommunications, but also offers a wide range of subjects including science, engineering, economics, management, literature, education and arts.

The university has four campuses — in Xianlin, Sanpailou, Suojincun and Jiangning. It now boasts 20 schools, 20 research institutes and one independent college. In all, there are 2237 faculty members and more than 30 000 students.



Nanjing University of Posts and Telecommunications actively promotes international exchange and cooperation. We have established long-term academic cooperation with overseas universities and research institutes, and invited more than 1000 international experts and overseas scholars to attend conferences and give lectures. Dozens of international experts teach at the university.

Throughout its 70-year history, the university has trained more than 100 000 elite professionals in science, technology and management, earning itself a reputation as the “cradle of China’s IT talents”. The university is now seizing every opportunity, and moving ahead in leaps and bounds, to become nationally and internationally renowned for the high quality of its teaching and its outstanding research in the field of information science and technology.

Why did your university join ITU and what benefits do you expect from being a member?

Professor Yang Zhen: Knowing that ITU is the specialized agency of the United Nations responsible for the world's telecommunication affairs, we welcome its role in establishing the global communication system, and in connecting all human beings through information and communication technologies. For many years, professors at Nanjing University of Posts and Telecommunications have been assigned to participate in ITU standardization activities.

We see ITU membership as a way of strengthening our communication and exchange of knowledge with experts from other countries in all the academic fields related to telecommunications. More specifically, membership of ITU makes it much easier for representatives of our university to attend the different kinds of academic conferences and meetings organized by the Union, and to participate more fully in ITU activities. These are the reasons that prompted Nanjing University of Posts and Telecommunications to apply in 2011 to become an academic member of both the ITU Telecommunication Standardization Sector (ITU-T) and the ITU Radiocommunication Sector (ITU-R).

With regard to the benefits we expect, we hope for more help from ITU in communicating with experts and research units in the relevant academic fields, and we are also looking for greater support in exchanging knowledge with our peers.

We hope that more universities and scientific research agencies in the field of telecommunications and information and communication technologies, from a wide range of countries, will take the initiative of joining ITU in order to contribute more actively to the development of international telecommunications, using the platforms provided by ITU.

What are your main areas of interest within ITU?

Professor Yang Zhen: With academic membership in both ITU-T and ITU-R, Nanjing University of Posts and Telecommunications is interested in all kinds of academic and educational activities in the areas related to those Sectors. We are especially interested in the Internet of Things, and a tremendous amount of work is now being carried out at our university in order to make progress in this exciting new field.

Would you encourage other universities to join ITU?

Professor Yang Zhen: Of course we will encourage other universities to join ITU. As more and more universities become academic members of ITU, communication among participating academics will become more active and the exchange of knowledge will be more fruitful. All the membership will benefit from taking part in the different kinds of activities that ITU organizes.



A delegation from Nanjing University of Posts and Telecommunications with Houlin Zhao, ITU Deputy Secretary-General, during their visit to ITU headquarters

ITU/C. Montesano

We thank ITU for the guidance it provides, for acting as a bridge to get the membership together so that they can communicate better, and for providing platforms that make it possible for members of the ITU family to cooperate with each other more effectively.

How was your recent visit to ITU headquarters?

Professor Yang Zhen: We were very impressed by our visit to ITU headquarters in July this year. We had the opportunity to attend meetings and listen to various experts discussing topics of

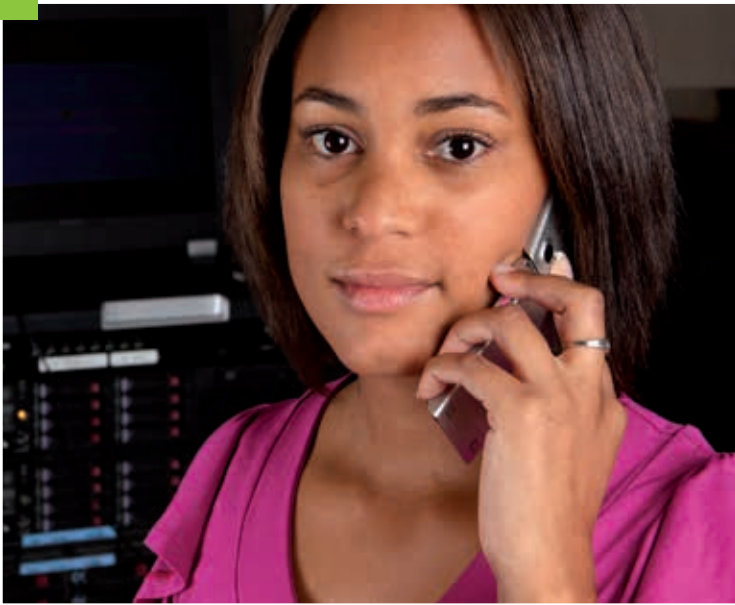
interest. We hope that our professors will have more opportunities to participate in such meetings. This would open up greater possibilities for the exchange of knowledge and for cooperation in the field of telecommunications and information and communication technologies.

We also had the great pleasure of visiting an eminent alumnus of our university, Houlin Zhao, Deputy Secretary-General of ITU. We are delighted and honoured that a graduate of Nanjing University of Posts and Telecommunications is working for this lofty international organization. We had very fruitful discussions with him, in particular regarding further cooperation between universities and ITU. ■

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Official Visits

During August 2014 courtesy visits were made to ITU Secretary-General Dr Hamadoun I. Touré by the following ministers, ambassadors to the United Nations Office and other international organizations in Geneva, and other important guests.



From left to right: Walid Mahmoud Abdelnasser, then Ambassador of Egypt; Dr Hamadoun I. Touré, ITU Secretary-General; and Atef Helmy, Egypt's Minister of Communications and Information Technology



Wonki Min, Chairman-Designate of the ITU Plenipotentiary Conference 2014 and Director-General of the Republic of Korea's Ministry of Science, ICT and Future Planning



Yasuo Sakamoto, Vice Minister for Policy Coordination (International Affairs), Japan's Ministry of Internal Affairs and Communications



Faisal Bin Abdulla Al-Henzab, Ambassador of Qatar



Pamela Hamamoto, Ambassador of the United States

MEETING WITH THE SECRETARY-GENERAL

Official Visits



From left to right: Houlin Zhao, ITU Deputy Secretary-General; Kathy C. Brown, CEO, Internet Society; Dr Hamadoun I. Touré, ITU Secretary-General ; and Ayesha Hassan, Senior Director for Stakeholder Engagement, Internet Society



Houlin Zhao, ITU Deputy Secretary-General and Giacomo Mazzone, Head of Institutional Relations at the European Broadcasting Union (EBU)



James Manzou, Ambassador of Zimbabwe



Mohamed Nasser Al Ghanim, Director General of the United Arab Emirates Telecommunications Regulatory Authority



Jackie Ruff, Vice President of Verizon's International Public Policy and Regulatory Affairs

All photos are by Claudio Montesano Casillas/ITU.



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