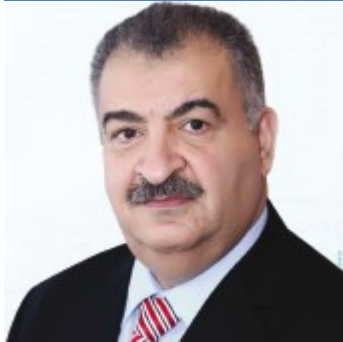# Connect Arab Summit 2012 Follow Up

Contents

ITU's relentless efforts to connect the Arab States

Ebrahim Al Haddad,
ITU Regional Director for the Arab States

The Connect Arab Summit held in Doha, Qatar, from 5 to 7 March 2012, tasked ITU to follow up on the agreed goals — access and infrastructure, digital content, cybersecurity, and innovation — and to move ahead with projects that had been proposed by stakeholders.

Over the past year, ITU has been active in ensuring that the aims of the summit are met and that the commitments made by leaders at the summit are fulfilled. In collaboration with interested parties, ITU has pursued every opportunity — as described below — to ensure that the summit goals are achieved.

Access and infrastructure

A range of activities have been undertaken to improve access and infrastructure in the Arab region.

Transition from analogue to digital transmission

A concept paper on digital television transition in the Arab Region was developed in 2012 with the objective to provide a roadmap for the transition in selected countries and to demonstrate applications for enhanced broadcasting. More than 10 workshops and frequency coordination meetings were organized across regions in cooperation with the Radiocommunication Bureau and the Centre of Excellence (CoE) network.

ITU is collaborating with the key players in the Arab region such as the Arab States Broadcasting Union (ASBU), the Arab ICT Organization (AICTO) and the Arab Spectrum Management Group (ASMG) to facilitate a smooth transition from analogue to digital broadcasting in the Arab region. ITU is about to launch a project with the involved stakeholders to assist countries with the transition from analogue to digital transmission. The project includes a study of possible approaches to implementing this switchover, as well as of ways to overcome the associated financial obstacles.

ITU is assisting Sudan and Djibouti to develop their national road maps for the transition from analogue to digital broadcasting. The road maps set the targets to be achieved, define the roles and responsibilities of ministries, and describe the strategy to be followed to achieve this transition. In addition, ARO is assisting Lebanon in the revision and finalization of Roadmap for digital terrestrial Television roll-out project with regard to the regulatory and technical levels.

A regional workshop on the Digital Transition and Digital Dividend in the Arab region organized in collaboration with ASBU and AICTO and hosted by NTC Sudan in Khartoum in December 2013, aimed at increasing spectrum management and digital transition management capabilities of Arab Administrations. The workshop showed the close cooperation between the ITU and the involved regional organizations (ASBU, AICTO) and the level of cooperation between BDT & BR, and it covered all aspects of the GE-06 Agreement and the ITU activities and assistance on the digital broadcasting transition and provided a good room to discuss the digital dividend and its related benefits and challenges.

Internet exchange points

A project on Arab Internet exchange points (IXPs) aims to build a network connecting the Internet infrastructure in the Arab States. This will enable these countries to better route traffic both inside and outside of the Arab region.

Following the endorsement of this project by the Arab ICT Council of Ministers in June 2012, a meeting of the Arab group in charge of the Connect Arab Internet Networks project was held to prepare and implement the Arab IXPs strategy.

The Arab IXPs network will be designed to facilitate electronic exchanges between the Arab countries. The network will also promote cooperation between Arab operators with the aim of reducing bandwidth costs and interconnection tariffs.

The establishment of the Arab IXPs network will both decrease the cost of services offered to end users and improve the security of exchanges within and outside the Arab region.

The project will help in achieving the objectives of the Connect Arab Summit, in particular by speeding up the roll-out of broadband networks in all Arab countries and by increasing affordability of ICT services throughout the Arab region.

During the Tunis meeting in November 2013 the Arab IXPs network team decided to continue working on national and regional level to build up the Interconnected Arab Internet Networks.

Direct assistance to countries

As part of its development role, ITU provides direct assistance to least-developed countries to establish and encourage network roll-out and connectivity. To this end, ITU has assisted a range of economies since the Connect Arab Summit.

In Palestine, ITU has undertaken a project on enhancing connectivity for the Ministry of Education networks, with an input of USD 195 000 over a period of three years. This is the initial phase of a project that will subsequently bring in other players — such as the United Nations Relief and Works Agency (UNRWA) — to serve needy schools.

In 2012, ITU started a Connect a School project in Comoros. This project, worth USD 200 000, is in its last stage of implementation. The project will ensure the connectivity of five rural schools with ICT access, also a second phase of connecting another 10 schools is in progress.

With the assistance of the McGraw Foundation, ITU has initiated a wireless broadband national network in Djibouti, through a project worth USD 500 000.

ITU has also initiated a pilot project on the use of ICT for the benefit of artisanal fisheries. The aims are to find an artisanal fishing zone willing to take part in the project and to provide training on the use of ICT tools and applications to support the business of fishing.

In Yemen, ITU has initiated a mission to provide advice in regard to broadband services and new 3G Mobile Broadband license.

Assistance to Somalia was provided by purchasing two sets of Test Mobile Systems, the second phase of support and training to use these equipment is in progress to enable the Ministry of Telecommunications to monitor their spectrum and unused bands.

Finally, ITU has carried out a project on the establishment of a data centre for Mauritania. The result of this project was presented to Mauritanian authorities for refinement and for the steps to be taken to finance and establish the data centre.

Seminars and workshops on broadband technologies

ITU has held a series of seminars and workshops to provide technological solutions for commercially available fixed and mobile networks. In addition, these events provide an opportunity to analyse the technical and economic constraints related to technologies, and to present successful experiences of dealing with them.

These seminars and workshops help in achieving the goals of the Connect Arab Summit, in particular in regard to the objective of building workforce skills to prepare for broadband-enabled economies, and — as a long-term target — to achieve completion of infrastructure and universal access, and improve the quality of service.

The most recent workshop was held in Tunis in June 2013 and dealt with the technologies, concepts and deployment of IMT systems.

The first phase of the Djibouti Broadband Wireless Network project has been completed and was inaugurated in presence of the President of the Republic of Djibouti during the visit of the ITU SG to Djibouti in December 2013.

In April 2013, a second C&I Training addressing EMC and Radio Transmission for the Arab Region was conducted in collaboration with CERT of Tunisia. Further training is planned as part of an ongoing agreement between ITU and CERT.

In September 2013 a workshop on "New Trends for building and Financing Broadband: Policies & Economies" was organised in Manama Bahrain, it addressed regulatory, technical and economic issues related to broadband communication networks. 71 participants from 15 countries attended this workshop.

The Seminar on "Fiber Optics for Communication Networks: From Standards to Deployment" organized in Algiers was very successful in term of participation (More than 200 participants) and the quality of discussions on the proposed themes. Best practices on 1) Infrastructure Sharing 2) FO Access network standards 3) Cost of FO Deployment were shared and discussed between participants

Boosting national broadband master plan initiatives

ITU's work in helping countries to develop their master plans for broadband aims to boost national initiatives in this area. The activity, which complements ITU's direct assistance to countries, aims to help countries identify the most appropriate solutions — in the context of their particular circumstances — for the implementation of broadband infrastructure.

The development of a broadband master plan helps in reaching the goals of the Connect Arab Summit, in particular the objective of rapid deployment of broadband networks in all Arab countries, and — as a long-term target — achieving completion of infrastructure and universal access, and improving quality of service.

Most recently, a broadband master plan was developed for the Syrian Arab Republic. Contacts are now being made with Iraq with a view to ITU providing assistance in developing a national broadband master plan. This assistance is expected to be scheduled for 2014.

Digital content

The development of Arabic digital content is one of the regional initiatives adopted by the World Telecommunication Development Conference in 2010 (WTDC-10) in Hyderabad, India, and this important goal is a priority of ITU. Numerous activities are being planned by ITU's Regional Office for the Arab Region to boost Arabic digital content. Some of the key activities that the regional office has been working on are summarized below.

As a follow-up to the Connect Arab Summit, and as part of an initiative to promote digital content, ITU has worked with the League of Arab States to establish the ".ARAB" domain name, both in the Latin and Arabic strings, injecting a cash contribution of USD 380 000 for the submission of the application for this domain name. Availability of this top-level domain name will ensure easy access to Arabic digital content and spur the development of such content. Centralizing access to a large store of Arabic content will help to promote a unified digital economy in the region.

Heritage is an important part of digital content, and ITU has pushed for the digital preservation of Arab heritage by supporting the regional project entitled "Memory of the Arab World". With the collaboration of the Egyptian Ministry of ICT and the support of CULTNAT (Egypt's Center for Documentation of Cultural & Natural History), efforts are being made to preserve the entire Arabic heritage digitally and make it available to a wider audience around the world. To ensure that a careful professional approach is taken to collecting and preserving Arabic heritage, a train-the-trainer workshop on digital preservation techniques for natural and cultural heritage is planned to take place before the end of the year.

A forum on Arabic digital content, and on the challenges of spreading and increasing content, was held in December 2014 in Cairo, Egypt. The forum brought together the relevant stakeholders to discuss ways and means of pushing Arabic digital content forward and reducing barriers to its development. In an effort to build on the momentum created by this forum, a second one is planned to take place in Masqat, Oman in May 2014.

A regional competition on Arabic digital content was launched during the Regional Development Forum for the Arab Region sponsored by the Telecom Regulatory Authority of Bahrain and in collaboration with key stakeholders such as the United Nations Economic and Social Commission for

Western Asia (UNESCWA) and Egypt's Information Technology Institute. The purpose of this competition is to reward innovations from youth in this field.

A report on Arabic digital content is being finalized with UNESCWA's support. The report, which will be published mid 2014, describes the nature of digital content in the Arab region and identifies the main players in the field. It also presents statistics indicating related social and business trends.

Cybersecurity

The important goal of cybersecurity is a priority for ITU's Regional Office for the Arab Region, given that cybersecurity is one of the regional initiatives adopted by WTDC-10 in Hyderabad. In order to enhance knowledge and skills of members in relation to cyberthreats, The regional office has organized numerous activities and workshops at the regional level such as a Regional Arab Forum on Cybersecurity in Egypt in 2011 and the ITU Regional Workshop on "IMPACT Alert-Cyber Drill for Partner Countries" in Amman, Jordan in 2012 and is planning to organize many more. Some of the main activities that the regional office has been working on to boost cybersecurity are described below.

Child online protection

ITU ARO conducted several workshops on issues related to Chile Online Protection for the Arab Region. In October 2011, ITU ARO organized a regional workshop on Policy Advocacy & Capacity Building in COP for the Arab Region in Muscat, Oman, which focused on the ITU's GCA/COP Strategic Pillars: Legal Measures, Technical and Procedural Measure, Organizational Structure, Capacity Building and International Cooperation. A workshop on the "Legal aspects of child online protection in the Arab region" was held in Algeria in June 2012, in line with the goals of the Connect Arab Summit, in particular to achieve the objectives of protecting users — especially children and youth — against the risks posed by illegal use of ICT, and of improving and consolidating regional cooperation to effectively address the growing threat posed by cyberattacks and cybercrime. The workshop provided an opportunity to discuss in detail the challenges, opportunities and best practices regarding the legal aspects of child online protection in the Arab region.

A regional Working Group on Legal Framework for Child Online Protection in the Arab region was established in January 2013 as a follow-up to the decisions and recommendations on cybersecurity made during the Connect Arab Summit. The working group, which counts UNESCWA and the Arab Observatory on Cybersecurity among its members, aims to promote the development of appropriate legislation and regulatory frameworks to ensure safe use of the Internet by children. The working group also promotes regional cooperation and harmonization of standards within the Arab region, advise on observance of the Model Law standards at the national level, and monitor the adoption of child online safety legislations at the country level. The WG has started reviewing the legislative frameworks on cybercrime in 12 out of the 22 beneficiary countries in the Arab Region. The work was completed by the end 2013 and final guidelines for legal framework on COP legislation developed through stakeholder consultations and will be shared with the countries concerned, to achieve the objective of establishing a pan-Arab agreement on cybersecurity and cybercrime, and harmonizing policies, strategies and legislation.

Regional Cybersecurity Centre

A Regional Cybersecurity Centre has been established by ITU and the Omani government (represented by the Information Technology Authority). The centre was officially launched in March 2013, with a view to strengthening the role of ITU in building confidence and security in the use of ICT in the region. The centre will act as ITU's cybersecurity hub in the region, localizing and coordinating cybersecurity initiatives and providing assistance to the Arab countries. The centre will also act as a catalyst for enhancing regional cooperation, coordination and collaboration to address escalating cyberthreats. It will provide a better reach for ITU's cybersecurity initiatives in the Arab region. In addition, it will enhance the region's capacity, capability, readiness, skills and knowledge in the areas of cybersecurity, critical infrastructure protection and human capacity building. Number of activities was carried out within the framework of the RCC and many other activities are schedueled.

Direct assistance to countries

ARO significantly contributed to the achievement of confidence and security in the use of ICTs in the Arab region. This was achieved through many activities and projects that have been carried out in the region to assess the readiness of national Computer Incident Response Teams (CIRTs), with a view to ensuring that they serve as trusted, central coordination points of contact for cybersecurity. The ITU project to carry out CIRT assessment has already provided consultancy services to Lebanon, Djibouti and Mauritania, and is scheduled to provide similar services to Yemen and Palestine. The Regional Cybersecurity Centre will assist countries in the region to set up their CIRTs, and will offer technical support. A new project for assisting Lebanon to establish its national CIRT Centre has launched recently with the aim to emphasize Lebanon's capabilities in protecting its critical infrastructure.

A new project "Least Developed Countries Infrastructure Protection Program - Project Framework", was initiated by BDT in order to serve LDCs and provide them assistance in strengthening their cybersecurity capabilities to better respond to cyberthreats and to ensure enhanced protection of their national infrastructure, Comoros, Djibouti and Mauritania are the beneficiaries countries in the Arab region.

ITU and its Regional Cybersecurity Centre in Oman, together with the International Multilateral Partnership Against Cyber Threats (IMPACT), is working with Sudan on a project to establish a digital forensic laboratory.

Capacity building

A regional workshop on "IMPACT alert — Cyber drill for partner countries" was conducted in July 2012 in Amman, Jordan, to help raise the level of efficiency of Computer Emergency Readiness Teams (CERTs) in the Arab region and to test the capabilities of CIRTs in responding to attacks. The workshop was held in cooperation with IMPACT and a large number of international specialized companies. A second Regional workshop on "Cyberdrill for Applied Learning for Emergency Response Team" was organized within the framework of the Regional Cybersecurity Center in Oman in October 2013. The purpose of this event was to enhance the communication and participating teams' incident response capabilities. The simulation aimed at assisting partner countries to develop and Implement operational procedures in response to various cyber incidents, and to identify improvements in their planning and process in the area of cybercrime. National Computer Incident Response Teams (CIRT) from twelve countries – Bahrain, Egypt, Kuwait, Libya, Mauritania, Morocco,

Oman, Sudan, Qatar, UAE, Saudi Arabia, and Tunisia–participated in the cyber drill. Plans for the regional centre also envisage a lot of activities to improve capacity building in cybersecurity.

Recently, a cybersecurity focal point was nominated in ITU's Regional Office for the Arab Region and trained to follow up on the implementation of the cybersecurity initiative in collaboration with the regional cybersecurity center and on how best to undertake activities in the region with ITU partners.

Innovation

One of the key activities of ITU — which is also a regional initiative adopted by WTDC-10 — is promoting free and open source software (FOSS). This year ITU's Regional Office for the Arab Region is collaborating with key stakeholders to establish a regional network of FOSS centres. The network will boost innovation in FOSS as stakeholders collaborate regionally to develop software that meets their developmental needs.

ITU has reached an agreement with the Tunisian government to establish the first national FOSS centre in Tunis. The agreement was signed in 2012 by the Director of ITU's Telecommunication Development Bureau and Tunisia's Minister of ICT. The centre will be one of the cornerstones of the regional FOSS network, and will provide support and assistance to other regional centres yet to be established.

In another activity to promote innovation, ITU plans to bring together the heads of ICT technology parks in the Arab region. The main objective of this meeting will be to create a platform for sharing experience and promoting the activities of technology parks in the Arab region. During the meeting, the heads of ICT technology parks in the Arab region will consider creating a new entity — an Arab network of ICT technology parks — to promote cooperation and exchanges between its members.

ITU's Regional Office for the Arab Region is planning to support the establishment of incubators in countries that have not yet created such facilities. Incubators are an effective tool to support entrepreneurship and innovation. Fortunately, the Arab region has numerous success stories in this domain, and the regional office hopes to disseminate this knowledge to interested countries in the region through a workshop to be held in 2013.

ITU provides continuous support to the Arab ICT Technoparks and Incubators. In this framework, the Arab Association of Technoparks and Incubators ATECNET was created during the meeting organized by the ITU in Tunis and the founders agreed to organize the first Assembly of ARTECNET in Algeria in 2014 which will be also sponsored by ITU.

Within the framework of a project initiated in 2007 on "Promotion of the digital Arabic content industry through incubation", UNESCWA — in collaboration with national technology incubators — is organizing a competition to support the incubation of the best digital Arabic content projects for a period of one year. The competition is open to young entrepreneurs as well as university and college graduates who have a project idea or a concept that would contribute to the development of the digital Arabic content industry.

Further follow-up

As decided by the Connect Arab Summit and endorsed by the Arab Council of Ministers, ITU and the League of Arab States are tasked with holding meetings to follow up on the summit. The first follow-

up meeting was held in November 2013 on the fringes of the ICT4ALL event being organized by Tunisia. The timing of this meeting was chosen to ensure maximum participation of stakeholders and partners connected to the summit.

Several projects were proposed during the summit, representing a total potential budget of nearly USD 50 billion. Of course, funding will have to be found for these projects, in particular from regional development banks. To this end, ITU's Regional Office for the Arab Region carried out a field study of all the regional financial institutions to identify their priority areas for projects and find out about their mechanisms for resource mobilization.

A major step in this regard is the agreement of His Highness the Emir of Qatar to set up a fund to implement development projects in the region. ITU is coordinating with counterparts in ictQATAR to finalize the administrative procedures for setting up this fund. Once the fund is up and running, proposed projects will be presented to its steering committee for funding approval.

Along with funding, partners and stakeholders are drivers of project implementation. In that context, ITU has been seeking opportunities to engage the private sector in the development and implementation of regional or country-specific projects.

Goals and objectives agreed at the Connect Arab Summit	
Goal 1: **Access and infrastructure**	*The objectives are to establish and modernize infrastructure, achieve universal access and — as a long-term target — improve the quality of service. These objectives imply promoting the rapid deployment of broadband networks in urban and rural areas in all Arab countries, and increasing the availability and affordability of ICT services throughout the Arab region. In terms of access, it will be necessary to build workforce skills to prepare for broadband-enabled economies, and further promote the use of ICT to respond to the special needs of various segments of society, including persons with disabilities. Another objective is to establish Internet exchange points (IXPs) in all the Arab States, in order to increase the connectivity among these States and help reduce the international cost of the Internet, increase the security of telecommunications and information, avoid the use of international networks from outside the Arab region to connect the Arab States, and help in spreading Arabic digital content.*
Goal 2: **Digital content**	*The objectives are to focus efforts on increasing Arabic digital content on Internet sites by initiating national and regional programmes to develop content, as well as to promote innovation and incubators in order to encourage scientific research in processing the Arabic language. Other related objectives are to lower the cost of accessing digital content, and develop strategies to boost the consumption of digital content by Arab users so as to help in bridging the digital and ICT divide in the Arab region.*
Goal 3: **Cybersecurity**	*The objective is to strengthen regional cooperation to effectively address the growing threat posed by cyberattacks and cybercrime. This implies harmonizing policies, strategies and legislation, and establishing a regional legal framework on cybersecurity and cybercrime for all the Arab States. Related objectives include making efforts to increase levels of protection against the risks posed by*

	illegal use of ICT, with specific attention to children and young people, as well as to the safe use of the Internet.
Goal 4: Innovation	*The objective is to integrate ICT innovation as a key component of government policy, and develop national strategy in coherence with public development goals, with clearly expressed political support. This implies designing and coordinating an Arab regional approach to ICT innovation. This will help Arab countries to collaborate efficiently, and will promote regional integration in the field of research and innovation. At the individual level, the objective is to empower Arab citizens to innovate through a new educational approach that caters to the wider range of skills needed for innovation. From an economic standpoint, the objective is to provide appropriate financing for ICT innovation, and enable the competitiveness of the products of this sector in world markets.*

A post-Connect Arab Summit perspective from the SAMENA region

Bocar A. Ba,
Chief Executive Officer,
SAMENA Telecommunications Council

With the aim to bringing together financial, technical and — most importantly — human resources needed to focus on sustainable growth in information and communication technologies within the Arab States, the Connect Arab Summit 2012 has been an integral driver of identifying new projects. These projects will advance ICT growth by fostering cooperation among the various industry players across the digital ecosystem, encouraging the framing of effective ICT policies, and bringing industry stakeholders closer together. The summit also identified market opportunities worth USD 46 billion, directly linked to ICT access, applications and services throughout the region.

In this context, and in support of the summit agenda and outcomes, the SAMENA Council, assisted by ten of its key members, has conducted a study that estimates that accelerated digitization would have a cumulative regional socio-economic impact of around USD 1.3 trillion. The SAMENA Council has observed that the adoption of digital services and applications will inevitably drive great investment initiatives throughout the region's digital value-chain. Socio-economic benefits that could be achieved by focusing immediately on digitization and sound policy-making include a substantial impact on the SAMENA region's gross domestic product (GDP), as well as a measurable increase in the region's employment rate over a defined period of time.

The SAMENA Council has carried out ten country analyses — for Bahrain, Egypt, Jordan, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, Turkey, and the United Arab Emirates. The members of the SAMENA Council have also invested their time and financial resources to help paint a region-wide picture of digitization growth and ICT policy effectiveness, including country-specific digital road maps that will be presented to policy-makers in the countries concerned. Viva Kuwait and PTCL Pakistan have already announced the findings for Kuwait and Pakistan, respectively, and set out plans to boost digital growth in these countries.

The SAMENA Council has made an effort to link its findings with government visions of improving end-user access to digital services via mobile phones. The SAMENA Council's members in the United Arab Emirates, for example, are now leveraging their network capabilities to facilitate the development of e-services, supporting "SMART Government — Government of the Future" initiatives, and thereby empowering local people with greater access to, and participation in, policy-making.

An improved understanding of digitization in the region — facilitated by the SAMENA Council's study of 10 of the 25 countries in the SAMENA region — has led to new strategies for infrastructure deployment, access to broadband facilities in last-mile or underserved areas, and enabling innovation to drive the industry's as well as the region's future.

Sustaining future investment is a very important area to the agenda of ITU's Connect Arab Summit and is equally important to the long-term socio-economic well-being of the Arab region. In this respect, the SAMENA Council has been active in creating synergies with other organizations from various regions to address Internet matters, including emerging challenges. The SAMENA Council has also responded to the industry consultation on domain-name registration, an initiative carried out in response to the announcement at the summit of a "dot Arab" domain project.

Key drivers of change within the telecommunication industry include mobile Internet, content, social media, cloud-based service access, partnership-based operating and revenue-sharing models, and knowledge-based ICT policy-making. But in order to achieve the goals set by the summit, it is also critical to work on the ICT policy front.

Some governments in the region have expressed their willingness to revamp their ICT policies for the benefit of all those who consume telecommunication and ICT services and rely on them for socio-economic success. The SAMENA Council views this as a sign of progress and an opening up to stakeholder involvement — which the Council sees as being critical to the success of the digital initiatives of the future.

The SAMENA Council feels that the future of telecommunications rests on our collective ability to work together, fulfil the requirements of national digital agendas as well as those of the summit, and facilitate the creation of a digital environment that catalyses not only economic development, but also socio-political participation for the citizens of the Arab States.

The Arab ICT Organization (AICTO)

Khedija Hamouda Ghariani,
Secretary-General of AICTO

Working towards regional development goals

The Arab ICT Organization (AICTO) is a multistakeholder technical organization that is working towards connecting the Arab region as a way of contributing to the achievement of the region's development goals. AICTO's members, which include the public sector and the international private sector represented in the Arab region, as well as civil society, work together to implement the organization's action plan.

Supporting the Doha goals

Connecting the Arab region is a multistakeholder responsibility, and AICTO's goals and objectives are aligned with those identified by the Connect Arab Summit, held in Doha, Qatar, on 5–7 March 2012. These goals — accessibility, trust and security, digital content, and innovation — are reflected in the following three regional projects that AICTO submitted to the summit.

Promoting e‑accessibility in the Arab region

The percentage of people with disabilities in the Arab region ranges between 10 per cent and 15 per cent of the total population. It is well known that ICT can play an important role in alleviating the burdens of daily life for people with disabilities and their families. Through its project on e‑accessibility for people with disabilities, AICTO is committed to contributing to the development and the promotion of e‑accessibility within the Arab region.

Digital broadcasting switchover and mobile television in the Arab region

The joint project on digital broadcasting switchover and mobile television in the Arab region is the fruit of a partnership between AICTO and the Arab States Broadcasting Union (ASBU).

The main objective of this project is to enable the different stakeholders in the Arab region to work together to deliver a smooth switchover to digital television and radio, and to introduce the latest technological developments in mobile television and radio in the Arab region.

The Arab PKI Forum

The AICTO project on the Arab public key infrastructure (PKI) Forum aims at developing security requirements for e‑transactions in the Arab world. The project is also investigating how to facilitate e‑services (e‑commerce) among Arab countries. As its main output, the project will launch the Arab PKI Forum to provide a unifying framework for addressing matters related to e‑identity management and e‑signature in the Arab region.

Promoting employment, empowerment and sustainable agriculture

In response to the urgent needs of the Arab region — and in addition to the projects described above — AICTO has launched three new initiatives, each with an associated working group, dedicated to using ICT to promote employment, empowerment and sustainable agriculture.

The Arab Youth Empowerment Network (AYENET)

The Arab Youth Empowerment Network (AYENET) initiative was launched on the occasion of the first international forum on "Arab youth empowerment through ICT: job opportunities". The launch was associated with a competition among Arab youth for the best innovative projects and experiences related to ICT.

AYENET aims at promoting job opportunities for Arab youth in the ICT sector. The network offers young people capacity building to help them acquire the necessary skills for project development and management in the field of ICT. It also shows them how to use ICT as a tool to boost research and innovation, while helping them to find a supportive environment conducive to promoting private initiative.

Empowering Arab women through ICT

AICTO recognizes the importance of ICT as a sustainable development tool, necessary to ensure a better life for Arab citizens. Furthermore, studies of the potential benefits of ICT forecast that these technologies will provide new digital opportunities for Arab women and girls. AICTO has therefore launched a project entitled "Arab Women Empowerment through ICT". The project seeks to assess the impact of ICT on Arab women and to ensure their empowerment.

ICT for sustainable agricultural development in the Arab region

Throughout the world, ICT play a major role in ensuring sustainable agricultural development. Within the scope of the Arab food and water security programme, AICTO has initiated a regional project on ICT for sustainable agricultural development. The aims of the project are to survey the current state-of-the-art of the effective use of ICT in agriculture in the Arab countries, and to develop capacity building for Arab farmers and agricultural workers through the use of ICT in their daily work.

International outreach

AICTO is committed to coordinating its efforts with the international community in order to achieve the objectives set by the World Summit on the Information Society and to implement the Millennium Development Goals.

Mobile broadband

Catalyst for future growth in the Arab region

Peter Lyons
Director of Public Policy, Middle East and Africa,
GSMA

The mobile industry in the Arab States has made significant progress over the past decade, moving from a market with relatively little mobile penetration, to one that is a global industry leader, generating huge economic gains both within and outside the region. Between 2002 and 2012, the number of mobile connections across the Arab States soared from 19 million to 391 million, responding to the tremendous demand for mobile broadband services and connected devices.

This has given the regional economy a massive boost. The mobile industry contributed USD 54 billion to the economies of the Arab States, along with 1.2 million direct and indirect full-time jobs, in 2011. These numbers are even more significant in the wake of the latest World Bank report revealing that the unemployment rate among young people in the Middle East and North Africa is the highest in the world.

Mobile momentum

The availability of mobile networks creates great opportunities for new business and services: in 2011, the mobile industry was responsible for driving a further USD 78 billion of revenue for the economies of the Arab States. When taken alongside the mobile operators' direct revenues, that equates to approximately 5.5 per cent of total GDP for the region.

These achievements in the Arab region were echoed in the Connect Arab Summit held in Doha, Qatar, on 5–7 March 2012. The leaders of the Arab countries and stakeholders participating in the summit commended the current ICT development that has been achieved as a result of all the efforts deployed in recent years to harness ICT to increase rates of growth, reduce poverty and promote sustainable development in the region.

Participants in the summit set out priorities for the region so that it would continue along this path of growth. Among these priorities was the promotion and rapid deployment of broadband in rural and urban areas across the Arab region.

As one of the stakeholders participating in this summit, GSMA started working with other stakeholders to push for broadband. This effort was based on the conviction that the Arab region needs next-generation technologies such as LTE to handle the growing data volumes required by both businesses

and consumers, as well as to support the increasing requirement for connectivity anywhere — from our homes and cars to almost every aspect of our daily lives today.

Now it is time for the governments and regulators in the region to ensure that this momentum can and will continue. However, current levels of spectrum for mobile across the Arab States are insufficient to meet the growing demands from consumers and businesses, and are far lower than those in other developed economies. This has already brought some mobile operator plans to roll out LTE in the region to a grinding halt.

Spectrum scarcity

Regulators and governments have the power to address the crisis of spectrum scarcity by showing their continued commitment to mobile and allocating sufficient levels of spectrum. Instead of focusing on short-term gains with minimum returns — such as the high consumer and mobile operator taxes that are currently imposed by some countries, as well as high spectrum reserve prices — governments should adopt global best practices that maximize the advance of mobile technology and foster long-term revenue growth for the region.

Spectrum allocation should be handled in a manner that provides the highest commercial and social benefits over time, focusing on three primary approaches: spectrum harmonization; a transparent approach to spectrum licence renewal; and allowing operators flexibility to adopt new technologies and develop new services in response to consumer demand.

With this in mind, in September 2012, GSMA representatives travelled to Saudi Arabia to meet with local operator representatives, board members and policy advisors to discuss the best way forward for freeing harmonized spectrum in the 700/800 MHz, 1.8 GHz, and 2.6 GHz bands.

On 26 February 2013, GSMA Director Anne Bouverot convened a round table meeting of Middle East and North Africa operator CEOs in Barcelona. The meeting followed GSMA's inaugural operator CEO round table for the Middle East and North Africa, held in Dubai on 16 October 2012. Participants agreed that inappropriate government policy and regulation are among the biggest challenges faced by operators in the region. They highlighted lack of access to sufficient harmonized spectrum as being particularly challenging for operators, given the ever-increasing demand for mobile broadband services.

The United Arab Emirates regulator recently confirmed its decision to allocate the 700 MHz spectrum band to mobile. This will support affordable network roll-out and make it possible to reach more of the population. More Arab States now need to follow the example of the United Arab Emirates and seize the opportunity to meet the ever-increasing demand for mobile services from citizens in urban and remote areas alike.

Incentives for operators, maximum utility for users

GSMA continues to work closely with local member operators, regulators and policy-makers to promote an approach to spectrum licensing that provides an incentive for investment by operators, and that maximizes the long-term utility of mobile for society. With that in mind, GSMA will be hosting a Mobile 360 — Middle East leadership forum in Dubai. The GSMA Mobile 360 Series has been launched as a new series of regional conferences for executives in the mobile industry, as well as key regulatory and government representatives. These new thought leadership conferences will complement those that are run as part of larger GSMA events such as the Mobile World Congress, Mobile Asia Expo and NFC &
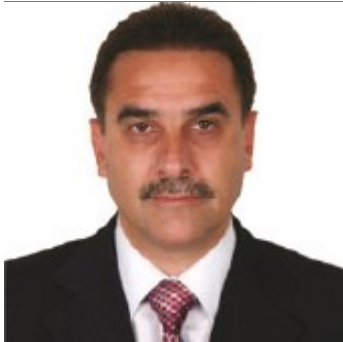
Mobile Money Summit, and will explore key mobile industry trends and issues on a regional basis. Mobile 360 — Middle East took place on 21 and 22 October 2013 at Dubai's World Trade Centre, where it was co-located with GITEX, the leading ICT event in the Middle East, Africa and South Asia region.

Growth potential

If governments work closely with the mobile industry and take the necessary steps towards allocating spectrum quickly and effectively, the mobile industry is predicted to contribute an additional GDP increase of USD 108 billion and create another 5.9 million more jobs between 2015 and 2025 alone. More widely, the region would be able to maintain its global mobile leadership status, sharing its expertise and technology advances with other parts of the world. Ultimately, the leaders of the Arab region would achieve the priorities they set in the Connect Arab Summit.

Towards regional integration
Activities of the United Nations Economic and Social Commission for Western Asia

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Ten years have lapsed since the first phase of the World Summit on the Information Society (WSIS), held in Geneva in 2003, which laid the foundation for a just, equitable and inclusive information society. The WSIS Geneva Declaration identified international and regional cooperation as one of the mainstays of the information society, declaring that humanity is interdependent and that cooperation is mutually beneficial to the donor and the receiver. It invites governments, the private sector, civil society, international financial institutions and other stakeholders to fund — and cooperate in implementing — initiatives to transfer knowledge to developing countries, least-developed countries and countries with economies that are in transition.

The initiatives and activities of the United Nations Economic and Social Commission for Western Asia (ESCWA) in the area of information and communication technologies (ICT) are carried out in cooperation with regional and international entities for the benefit of its member countries. The partners of ESCWA are the governments of the Arab region, the League of Arab States, other United Nations regional commissions, United Nations specialized agencies and programmes, national and regional nongovernmental organizations, as well as a host of players and stakeholders from the private sector.

Some of the recent activities of ESCWA's Information and Communication Technology Division in this area are outlined below.

Internet Governance Forum

Internet governance issues were not resolved during the two phases of WSIS. In view of their importance, the Tunis Summit (2005) tasked the United Nations Secretary-General to set up an Internet Governance Forum as a global multistakeholder platform for bottom-up dialogue on global public policy in regard to the Internet, who responded by launching this forum in 2006. In the light of the value of the forum at the international, regional and national levels, its first mandate of five years (2006–2010) was renewed for another five years (2011–2015).

By 2011, more than 10 regional Internet governance forums had been established in Europe, Asia, Latin America and Africa. These forums have proven to be valuable vehicles to reflect the regional position at the global level.

ESCWA's collaboration with the League of Arab States led to the development of the Arab dialogue on Internet governance. This resulted in ESCWA and the League of Arab States adopting, in October 2010, the "Arab Regional Roadmap for Internet Governance: Framework, Principles and Objectives", and issuing a call from Arab stakeholders.

Joint efforts by ESCWA and the League of Arab States to respond to the call of Arab stakeholders led in February 2012 to the establishment of the Arab Internet Governance Forum, a four-year process (2012–2015) in its first mandate, to act as a bottom-up decentralized platform for inclusive policy consultations that involve all relevant stakeholders. The first annual Arab Internet Governance Forum was convened in Kuwait on 9–11 October 2012, under the auspices of ESCWA and the League of Arab States, with the theme "Better Internet for a better Arab world". The meeting was attended by around 300 participants and resulted in the establishment of several thematic regional dynamic coalitions on specific high-priority policy matters.

There will be three more annual Arab Internet Governance Forum meetings (from 2013 to 2015). The agenda of these meetings is set by an Arab multistakeholder advisory group comprising around 30 experts from the Arab region. Under the umbrella of ESCWA and the League of Arab States, periodic meetings of the advisory group are scheduled every year to prepare for the annual Arab Internet Governance Forum meetings as well as to follow up on the process itself.

To further support the Arab Internet Governance Forum process, ESCWA adopted, at the 27th Ministerial Session, Resolution 306 (XXVII) entitled "Development of the Arab IGF process and sustaining efforts in the Arabic domain names field".

The Arab Internet Governance Forum does not take any binding decisions. Rather, it is a platform for open dialogue among stakeholders, falling within the framework of the joint initiative of ESCWA and the League of Arab States for Arab dialogue on Internet governance, as well as ESCWA's overall mandate to work towards the development of knowledge-based economies in the region, and the formulation and implementation of related policies and strategies. The importance of the Arab Internet Governance Forum process to ESCWA is that it will facilitate implementing programmes in line with the Arab Regional Roadmap for Internet Governance, which identifies the needs and priorities of the Arab region. The Arab Internet Governance Forum process will seek to build capacity and raise awareness among stakeholders in Arab countries on themes such as regional peering, Arab domain names, child online protection, as well as on other topics where governance policies are lacking.

Digital Arabic content

In 2012, ESCWA launched a new phase of its initiative on the "Promotion of the Digital Arabic Content Industry through Technology Incubators". The initiative taps the digital Arabic content industry's potential and features national awareness campaigns on the importance of digital Arabic content.

The project aims to launch national digital Arabic content competitions targeting entrepreneurs and university graduates aspiring to build novel applications and products that take advantage of new trends and technologies. Winners of the competition will spend 6 to 12 months at partner business incubators, where they will be provided with office facilities, business and marketing advice, and coaching on start-up processes and prerequisites. Partnership is a key element of this initiative, and

ESCWA has joined up with several national business incubators, entrepreneurship and innovation centres, and universities in participating Arab countries. ESCWA's partners have themselves approached other national partners to form a multistakeholder partnership for implementing the initiative in specific countries.

ESCWA held an experts meeting on this initiative on 1 and 2 October 2012, which was hosted by the Royal Scientific Society in Amman, Jordan. Stakeholders involved in digital Arabic content development, including representatives of ICT authorities, innovation funds, business and technology incubators, ICT associations, and international and regional organizations discussed implementation modalities and partnership mechanisms. The participants expressed their interest in collaborating with ESCWA in the implementation of the initiative.

Further information is available at the meeting's webpage:

http://www.escwa.un.org/information/meetingdetails.asp?referenceNUM=1901e

and at ESCWA Weekly News:

http://css.escwa.org.lb/weeklynews/wnews/uploads/41e12.pdf

ESCWA has published a study on the "Status of the digital Arabic content industry in the Arab region", which presents a number of success stories selected from countries of the region and sheds light on developments in the industry, as well as on the latest technology trends. The study discusses the components necessary to create an environment that will enable the industry to flourish, such as investment, appropriate government policies, and education and training.

The study estimates the value of the digital Arabic content industry in 2011 to be USD 18 billion, including user-generated content, advertising and Internet content, entertainment and media. This value is expected to grow to USD 28 billion in 2015. The study concludes with a set of recommendations on the role of government, the infrastructure required, means of financing, investment opportunities, and the importance of education in this area.

The study is downloadable at:

http://www.escwa.un.org/information/pubaction.asp?PubID=1236

As part of its efforts to promote the digital Arabic content industry in the Arab region, ESCWA has published a study on "Business Models for Digital Arabic Content" which describes new business models for establishing start-up companies in this area.

The study focuses on new dynamics and trends in content development, such as the emergence and growth of mobile computing, social networks and user-generated content. It discusses business models applicable in the digital Arabic content industry, in particular the advertising model, the manufacturer model (which uses the Internet for direct sales) and the subscription model (which works only for premium content that is not accessible by other means).

The study is downloadable at:

http://www.escwa.un.org/information/pubaction.asp?PubID=1319

Cyberlegislation

Most developed countries, as well as some developing countries, have modernized their legal and regulatory frameworks in response to advances in ICT. In contrast, many countries in the Arab world are still in the early stages of developing or enacting cyberlegislation. In order to narrow this legislative divide and to minimize the illegal use of cyberspace in the region, Arab countries need to formulate cyberspace laws and adopt the related organizational and management regulations.

To provide support in this respect, ESCWA initiated a project on "Regional harmonization of cyberlegislation to promote the knowledge society in the Arab world". The project, amounting to USD 400 000, aimed to enhance regional integration, and strengthen country capacity in drafting and enacting comprehensive cyberlegislation. The overarching goal of the project was to help build the information society, by creating a strong and sustainable ICT sector, and by fostering the development of an enabling environment.

The project was implemented with the involvement of various stakeholders, and tapped the knowledge and experience of experts and consultants in the field of cyberlegislation from the Arab region and worldwide. The project's main output is the ESCWA Cyber Legislation Directives, which in terms of scope and completeness are the first of their kind to be published in the Arab region. The directives cover the following areas: e-communication and freedom of expression; e-signature and e-transactions; e-commerce and consumer protection; personal data protection; cybercrimes; and intellectual property in cyberspace. The modular design of the directives allows countries to use one or more themes depending on their needs.

Regional technology centre

In 2011, ESCWA established a regional technology centre in El Hassan Science City in Amman, Jordan, as an incubator and development organization. It is the only ESCWA duty station outside of Lebanon. The main objectives of the regional centre are to coordinate a network of national centres of excellence in science, technology and innovation in the Arab region, and to promote technology transfer to and among ESCWA member countries.

The regional centre aims at eliminating any duplication of effort, as well as identifying the gaps in the science, technology and innovation system at the regional level. The centre is mandated "To foster synergy and complementarity at the regional level in the application of technology" among relevant institutions and stakeholders in the ESCWA Member States.

Since the start of the project, two years ago, an analysis has been made of the strengths, weaknesses, opportunities and threats in regard to science, technology and innovation in the region, as a basis for suggesting and facilitating partnerships. This will help in building strategies for complementary activities and in finding the right partnership opportunities.

In November 2012, the regional technology centre hosted a preparatory meeting which resulted in the setting up of a thematic group among United Nations agencies (UNESCO, DESA, UNEP, UNWOMEN, UNCTAD and others) to align the outcomes of regional meetings with United Nations regional activities.

The United Nations Economic and Social Council held its annual ministerial review meeting in 2013 on the theme of science, technology and innovation, and role of culture in sustainable development.

The regional technology centre has provided technical advisory services to SIRB Angel Investors Network -KACST and the King Abdullah City for Atomic and renewable Energy (KACARE) in Saudi Arabia. The centre has reviewed the innovation hub track plans and injected proposed innovation relevant to KACARE energy plans from Jordan, Lebanon and other countries within the region. It has facilitated the hosting of a green help desk by the National Energy Research Centre at the Royal Scientific Society of Jordan. It has also facilitated three intellectual property review contracts between the national Intellectual Property and Commercialization office of Jordan and Khayal production (Qatar) for two consecutive years, and the Industrial Research Institute (Lebanon).

Working with Jordan's El-Hassan Business Park and the Licensing Executives Society of Arab Countries, the regional technology centre has organized a commercialization tour to match 34 local small and medium-sized enterprises in the technology sector with 18 regional investors in Egypt, Jordan, Lebanon and Palestine. Eleven business transactions have been initiated at regional level.

Academy of ICT Essentials for Government Leaders in the ESCWA Region

A project to establish an "Academy of ICT Essentials for Government Leaders in the ESCWA Region" was initiated and approved in 2011 for an amount of USD 600 000. The three-year project aims to build capabilities in the region, and implementation started in February 2013.

The Academy will help ESCWA member governments enhance capacities to create and sustain an environment that promotes the transition towards a knowledge-based economy. In implementing this project, ESCWA is building on lessons learned in setting up a similar academy, the Asian and Pacific Training Centre for Information and Communication Technology for Development.

ESCWA is developing a structured and comprehensive ICT training curriculum, consisting of core modules. The curriculum targets civil servants and will be extended through training institutions.

Arab domain names system

The implementation of an Arabic domain names system will make the Internet accessible to all Arabs, irrespective of their ability to understand English. Until recently, English or ASCII characters were the only sets that could be used in Internet addresses or domain names. However, through the implementation of internationalized domain names (IDNs) by the Internet Corporation for Assigned Names and Numbers (ICANN), Arabs with limited or no access to a foreign language education can benefit from using the Internet in their own language.

The main objective of the involvement of ESCWA in the domain names field is to enhance linguistic diversity on the Internet and support the use of the Arabic language global domain name system, while maintaining interoperability. The expected outcomes include progress towards overcoming the language barrier, bridging the digital divide and increasing the Internet penetration rate in the Arab region.

For ten years now, ESCWA has spearheaded and supported activities for promoting the Arab identity in cyberspace. ESCWA has collaborated with the League of Arab States and Arab governments to promote and support the use of the Arabic language in the top-level domains of Internet addresses as part of the global IDN programme.

The information society in Western Asia

ESCWA regularly produces its flagship publication — The regional profile of the information society in Western Asia — within the framework of follow-up activities to the outcomes of WSIS. The publication describes the current situation and progress made in the ESCWA region over the previous two years towards building the information society. The 2013 edition is the sixth in the series, the first having been published in 2003, with subsequent editions in 2005, 2007, 2009 and 2011.

The findings and analysis set out in the regional profiles provide the basis for a variety of possible projects and initiatives that could be launched with a view to reducing the existing digital divide between rural and urban areas, between ESCWA member countries, and between the region and the more developed regions of the world. In this context, ESCWA is supporting a number of important regional projects through its regional plan of action for building the information society. The plan of action has already been adopted by ESCWA member countries, which recognize the vital need to work collaboratively and synchronize efforts in order to bridge the digital divide and press ahead with building the information society.

Advisory services on demand

ESCWA, through its advisory services, supports member countries in their development efforts. ESCWA recommends measures and policies to help member countries overcome specific problems. It undertakes capacity-building activities, including training workshops. It assists in the preparation of project proposals, and disseminates up-to-date knowledge and information in the field of ICT.

ESCWA advisory services are usually provided in response to an official demand from the Arab countries. ESCWA then designates experts and advisors to help meet the request. Most of these requests concern areas that are outside the scope of the work of governments or their specialized agencies.

The following table shows the number of advisory services during 2012–2013.

Economies	Number of advisory services
Pan Arab	*3*
Algeria	*2*
Bahrain	*1*
Egypt	*1*
Iraq	*2*
Jordan	*2*
Kuwait	*3*
Lebanon	*5*
Morocco	*4*
Occupied Territories	*3*
Qatar	*1*
Yemen	*6*
Saudi Arabia	*4*
Sudan	*3*
Syrian Arab Republic	*2*
United Arab Emirates	*4*
Total	**46**