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REPORT

EXPERT GROUP MEETING ON INVESTMENT, RESEARCH, DEVELOPMENT AND INNOVATION IN THE ICT SECTOR HAMMAMET, 7-8 MAY 2013

Summary

An expert group meeting on Investment, Research, Development and Innovation in the Sector of Information and Communications Technology (ICT) was held in Hammamet, from 7 to 8 May 2013. It was jointly organized by the Economic and Social Commission for Western Asia (ESCWA) and the Union of Arab Banks, under the patronage of the Tunisian Minister of Information and Communication Technologies. The meeting was part of the Arab Forum on the ICT Sector (Hammamet, 7-10 May 2013) and was followed by the Conference on Investment and Finance of the ICT Sector in the Arab Region (9-10 May 2013).

The meeting aimed to reach a common vision for developing a competitive ICT sector in the Arab region. It also sought to solicit comments on the ESCWA study titled “Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives”. The following topics were discussed: (a) competitiveness of the ICT sector and its contribution to the knowledge-based economy; (b) investment ecosystem of the ICT sector from regional and national perspectives; (c) research, development and innovation ecosystem of the ICT sector from global and regional perspectives; (d) vision for strengthening competitiveness in ICT at the national and regional levels. Participants also deliberated on the focus areas proposed in the study.

This event was attended by around 40 experts, including government officials from ICT authorities, entrepreneurs and managers, as well as representatives from the banking sector, civil society, international and regional organizations, academia, research centres and incubators, and investment companies in ESCWA member States.

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Introduction

1. The knowledge-based economy is a sector that holds great potential but remains underdeveloped in the Arab region, which is still in need of investment in the field of information and communications technology (ICT). Research has shown that suitable financing for the ICT sector coupled with institutional reforms supporting innovation are essential components for the development of sustainable knowledge-based economies in Arab countries. Investing in the sector would create new job opportunities for the young and skilled, revitalize the region's economies and lead to further socioeconomic benefits and rewards.
2. Through the Tunis Agenda, the 2005 World Summit on the Information Society (WSIS) stressed the need to develop financial mechanisms aimed at building the ICT sector in developing countries. Following a series of previous activities, the Economic and Social Commission for Western Asia (ESCWA) published in 2013 a study titled “Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives”, aiming to provide guidance and practical recommendations for boosting competitiveness and promoting innovation and investment in the ICT sector.
3. The expert group meeting on Investment, Research, Development and Innovation in the ICT Sector was jointly organized by ESCWA and the Union of Arab Banks (UAB), on 7 and 8 May 2013, in Hammamet. The meeting was followed by the Conference on Investment and Finance of the ICT Sector in the Arab Region, (9-10 May 2013); both events constituting the Arab Forum on the ICT Sector (Hammamet, 7-10 May 2013).
4. The meeting brought together stakeholders to reach a common vision and set recommendations for developing a competitive ICT sector in the Arab region. Participants discussed and offered suggestions on the study. The main topics addressed included: (a) competitiveness of the ICT sector and its contribution to the knowledge-based economy; (b) investment ecosystem of the ICT sector from regional and national perspectives; (c) research, development and innovation (RDI) ecosystem of the ICT sector from global and regional perspectives; (d) future vision for strengthening competitiveness in the ICT sector at the national and regional levels.

I. RECOMMENDATIONS

5. The discussions covered the following 10 focus areas, resulting in broad recommendations to enhance innovation and investment in the ICT sector:
 - (a) Government commitment: put ICT at the core of a clear, long-term, smart, sustainable and inclusive growth strategy;
 - (b) Adopt a bottom-up, holistic, “double ecosystem” view of ICT innovation;
 - (c) Improve legal and regulatory frameworks;
 - (d) Develop the financial system, sources of funding of start-ups and the proper financing modes to encourage investment in ICT activities;
 - (e) Ensure proper infrastructure;
 - (f) Invest in education and skills;
 - (g) Promote demand-side innovation policy;
 - (h) Leap-frog in technology and harness the potential of the cloud;
 - (i) Smart specialization: choose the layers of the ICT ecosystem in which investment should be stimulated;
 - (j) Seek economies of scale, preferably at the regional level.

II. PRESENTATIONS AND DISCUSSIONS

A. COMPETITIVENESS OF THE ICT SECTOR AND ITS CONTRIBUTION TO THE KNOWLEDGE-BASED ECONOMY

6. Moderated by Mr. Ayman el-Sherbiny, Chief ICT Policies in the ICT Division of ESCWA, this session included three presentations.

7. The first, “Contribution of the ICT sector in building the knowledge-based economy”, was delivered by Mr. Ibrahim Akoum, Associate Professor, Hariri Canadian University, Lebanon. He profiled the ICT sector and the knowledge-based economy concepts that have been gaining increased importance in the past two decades; he offered generic definitions of these concepts that will be used in the study. Despite measurement and definitional concerns, the ICT sector is widely agreed to have had a significant impact on promoting knowledge-based economies, and thereby economic and social development. This has been achieved by the value added of the sector itself to national output as a stand-alone sector, as well as the role of the ICT sector as an enabler to other productive sectors, through fostering total factor productivity. Therefore, ICT is one of the main pillars and the essential preconditions of the transition towards a knowledge-based economy. The sector provides the infrastructure, services and contents that flow among users of a knowledge-based economy.

8. The second presentation, “Software development industry and the ICT sector in the Arab region”, was given by Mr. Fouad Bajwa, public policy analyst, international development expert, researcher and advisor. He noted that the information economy is becoming led by the software industry. He discussed national software systems, referring to the 2012 Information Economy Report (IER) of the United Nations Conference on Trade and Development (UNCTAD), and focused on the Arab countries and benchmarks of their software development. He also discussed ICT sector growth trends and policies in countries that have made the transition from ICT enablement and "import only" activities towards successfully establishing ICT as a strong economic sector. Many countries in the Arab region still appear to be detached from the mainstream competition. The paper reflects and builds upon the findings, including policy recommendations from IER 2012 allocating specific variables to assess the state of the national software systems and ICT sector in Arab countries.

9. Ms. Nagwa el-Shenawi, Director of the Information Centre at the Egyptian Ministry of Communication and Information Technology, delivered remotely the third presentation, “Status and role of investment and innovation in the Egyptian ICT sector – an assessment”. She discussed the ICT structure in Egypt and its contribution to economic growth; investment in Egypt and the Arab region; ICT investment diffusion; innovation in ICT in Egypt; the innovation pillars and initiatives in selected Arab countries; and the challenges ahead.

B. INVESTMENT ECOSYSTEM OF THE ICT SECTOR – REGIONAL/NATIONAL PERSPECTIVES

10. This session, which included three presentations, addressed the investment ecosystem of the ICT sector from the regional and national perspectives. It was moderated by Fouad Mrad, Executive Director of the ESCWA Technology Centre (ETC, Amman).

11. The first presentation, “Financial ecosystem improvements to empower sustainable ICT in the Arab world” was delivered by Mr. Fares Kobeissi, Chairman and CEO of Bluring s.a.l., Lebanon. Entering the knowledge economy offers the Arab region an unprecedented opportunity to diversify its economies, limit the brain drain, reduce the digital divide and increase job creation substantially. It requires an easy access to capital and finance. Each company or entrepreneur would need different financing schemes for the different stages of a project. The speaker drew a map of all stages of financing required and identified policies, programmes and/or regulations that countries in the Arab region should introduce to enable ICT research,

innovation and development. He also noted that investors need viable exit strategies, a primordial step for sound investments.

12. The second presentation, “Tunisia offshoring development perspectives”, was delivered by Ms. Neziha Berzouga, Head of the Offshoring Promotion Department at the Foreign Investment Promotion Agency (FIPA) in Tunisia. She gave an overview of ICT potential in Tunisia, focusing on the importance of ICT in the national strategy of the country and shedding the light on development perspectives. She pointed to a case study on how “FIPA –Tunisia” is helping improve the image of the country as a favourable offshoring location. With ICT recognized as a key driver of economic growth, Tunisia has spent the last several decades significantly investing in boosting the sector. The country is now seeking to create jobs and give incentives to value-added activities, and modify its economic model to be based on innovation and technology.

13. The third presentation addressed the "Future of ICT investment in the Sudan" and was given by Mr. Adil Elfaki Hassan, President of the Sudanese Society for Information Technology (SSIT) and Chief, Economic Sector of Ministry of Finance – Khartoum. He discussed the growth of the ICT sector in the Sudan over the past decade, giving the growth in mobile penetration from 2008 to 2011 as an example. The growth was not coupled with an increase in investment in technology and other important areas of socioeconomic development, including e-education, e-health and e-commerce. The presentation also reviewed the Sudan’s future challenges in this sector, and referred to a law passed in 2013 that promotes investment in all economic sectors, including ICT, providing incentives and investment protection.

C. RESEARCH, DEVELOPMENT AND INNOVATION ECOSYSTEM OF THE ICT SECTOR – GLOBAL/REGIONAL PERSPECTIVES

14. This session addressed the RDI ecosystem of the ICT sector from global and regional perspectives and was moderated by Ms. Mirna Barbar, IT Officer, ICT Policies Section, ESCWA.

15. The first presentation, “Role of RDI in building the knowledge economy – regional perspective”, was given by Mr. Fouad Mrad, Executive Director of ETC. Giving economic profiles of individual Arab countries, he discussed subregional trends in research and development in the Arab region; major regional needs; innovation index; potential impact of RDI and the economic growth cycle; Arab research and development system as a promising potential; impact of science, technology and innovation in Arab countries; innovation opportunities; major challenges to commercializing RDI results; and the proposed guidelines to harness outcomes of research in industrial investments.

16. Titled “Private R&D laboratories: an investment opportunity in the context of economic crisis”, the second presentation was delivered by Mr. Omar Hammami, Professor, ENSTA ParisTech (*Ecole Nationale Supérieure de Techniques Avancées*), France. The economic crisis in Europe and the Mediterranean region is deeply affecting public and private investment policies. The next three years (2013-2016) will be a period of severe budget cuts and the systematic search of maximum efficiency for RDI. Risk aversion and the need for quick returns make R&D a target for budget cuts, even though it is well understood that it helps the growth of companies and thus their competitiveness. The current R&D organization models are poorly constructed and do not exploit the best potential in the ICT sector. He proposed a model of private R&D laboratories, based on recent initiatives in France.

17. Mr. Ilyas Azzioui, Chief Engineer and Incubator Manager at the National Centre for Scientific and Technical Research in Morocco, gave the last presentation, titled “Patterns and characteristics of innovation in the ICT sector from successful catching-up economies”. He discussed the importance of analyses conducted at the sectoral level, noting significant differences across economic sectors involved in catch-up. He pointed out how innovation differs across sectors in terms of sources and patterns of technological change, knowledge base and accumulation of knowledge, and organizations and actors, strongly emphasizing how ICT differs from other sectors. In the second part of his presentation, he discussed the common factors

affecting catching up in six economic sectors, namely telecommunications, software, automobile, pharmaceuticals, semi-conductors and agro-food, in the cases of several catching-up economies such as those of Brazil, China, India, Taiwan and Korea.

D. COMPETITIVENESS OF THE ICT SECTOR

18. Chaired by Mr. Georges Younes, First IT Officer, ICT Policies Section, ESCWA, this session addressed the study titled “Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives”. During this session, a presentation on “Overview of the competitiveness of ICT in the Arab region” was delivered by Andrea Renda, Professor of law and economics, LUISS Guido Carli University (*Libera Università Internazionale degli Studi Sociali*), Rome, Italy, and Mr. Ibrahim Akoum.

19. They pointed to infrastructure as the first key factor that makes the ICT sector competitive and often positively correlated with economic growth. Other key factors include education, skills and digital literacy, as well as institutional quality. The presentation profiled the layers of the ICT ecosystem and overviewed the key challenges for competitiveness of the ICT sector in the Arab region. These included limited access to finance, failing intellectual property rights and a weak ICT ecosystem, as well as inadequate infrastructure, a weak knowledge triangle with low research and development intensity, and a lack of researchers and technicians. Existing plans for ICT sector development in some Arab countries were highlighted, and the fact that institutions, innovation and investment are all needed for ICT competitiveness was stressed.

E. RESEARCH, DEVELOPMENT AND INNOVATION IN THE ICT SECTOR

20. This session was chaired by Ms. Mirna Barbar and addressed the subject of RDI in the ICT sector with a presentation on “Profile of RDI in the Arab region and opportunities for the ICT sector”, delivered by Mr. Ibrahim Akoum.

21. The presentation started with an overview of innovation as an ecosystem with many actors in the exploitation and commercialization of new knowledge, including entrepreneurs, companies, academic and research centres, angel investors and venture capitalists, and Governments. It then addressed innovation in the new ICT ecosystem where there are convergences between telecommunications and information technology and between the media and the Internet. The speaker emphasized the need to have measurement for innovation to benchmark and assess progress in innovation levels in the region. The existing innovation indices were profiled for the Arab region, based on the World Bank Knowledge Index and the World Intellectual Property Organization Global Innovation Index. The presentation showed that the region is late in innovation, with only a few countries investing in innovation through incubation programmes. For innovation to be rooted in the region, efforts are needed to give innovation and ICT strategies a priority in public policy; develop the legal and regulatory frameworks; improve the business environment; and provide the required physical and human infrastructure.

F. INVESTMENT IN THE ICT SECTOR – GLOBAL AND REGIONAL PERSPECTIVES

22. This session, chaired by Mr. Georges Younes, included a presentation on “Financing and investments in the ICT sector – global and regional challenges and opportunities” delivered by Mr. Andrea Renda. He pointed to general and ICT-specific factors that enable investment, including stability; rule of law; quality of institutions and infrastructure; an open economy; market size; and an investment-friendly tax system. He also noted ICT-specific factors, such as the promotion of venture capital, venture capital and angel investors, and capital markets. The main conclusions were the following: (a) a suitable and enabling business environment is required to promote ICT investment, together with sufficient broadband connectivity and resilient energy networks; (b) the areas of cybersecurity and data protection are increasingly important given the evolution of cloud computing; (c) the rule of law needs to be improved, and financial market stock exchanges should be

developed to enable technology trading and enhance investment in ICT; and (d) government assistance would be useful in developing partnerships and investments.

G. VISION AND WAY FORWARD

23. Chaired by Mr. Ayman el-Sherbiny, the last session of the meeting sought to offer a vision and set of recommendations for the future. It included a presentation titled “Setting a model for investment and RDI in the ICT Sector in the Arab region”, delivered by Mr. Andrea Renda and Mr. Ibrahim Akoum. They discussed the main factors of the competitiveness of the ICT sector, namely investment, innovation, and research and development. For sustaining a competitive advantage, national and regional strategies should be developed. For a national model, the best options are public-private partnerships, ICT infrastructure, institutional framework, and financial systems and modes.

24. Governments should commit to having ICT as a strategic sector, making it an integral part of their development plan. Indeed, an ICT innovation policy would require government leadership and facilitation. Promoting investment would also require strengthening the legal and regulatory frameworks, and developing the adequate financing systems, modes and sources of funding. The presenters recommended prioritizing investment, developing wireless broadband and providing affordable access; investing in education and ICT skills and the demand-side innovation policy that stimulates demand for innovative ICT solutions; and harnessing the potential of the cloud. As for the regional model, ICT priorities should be identified and the comparative advantages examined for countries. The Arab region is increasingly in need of developing its knowledge economy, of which the ICT sector is an essential part.

H. DISCUSSIONS

25. The discussions after each of the sessions covered the challenges facing investment in the ICT sector, the available opportunities for investment, the conditions for RDI in the region and the lessons learned. The deliberations were as follows.

26. The lack of data and indicators is a challenge in obtaining information on spending, investments and production. Emphasis should be put on accuracy, reliability and transparency when addressing indicators, especially if they are to be used for policy formulation. A strategy for data collection and publishing is needed to have reliable data on the region.

27. The financial ecosystem should be improved to increase investment in the ICT sector in the region and bridge the gap between the different economies that are impacted by ICTs, such as e-education and e-health. This would require budget allocations for early-stage investment. Also, the banking sector should play a bigger role in financing ICT projects, as they have high rates of return and are relatively low risk when compared to other types of projects, such as real estate. Governments have a key role in financing the ICT sector through their lending policies, which allow for giving the guarantee to the bank on behalf of the ICT companies. One such example is Kafalat in Lebanon, which is owned by the Central Bank.

28. In a well-built financial ecosystem, both investors and ICT entrepreneurs would be working together and could reach local and global markets. Governments should coordinate with the private sector, which has a role to play in developing regulations, ensuring data privacy and setting national strategies.

29. The lack of efficiency in research and development in the Arab region is a major hindrance to the ICT sector. There is a lack of incentive for researchers to try to solve national and regional problems that affect development, which could greatly benefit the region. There is a strong need for academic links to the ICT sector, which would help the industry with needed research while not necessarily requiring a significant amount of resources from academics.

30. Participants stressed the importance of competitiveness and affordability of ICT infrastructure, allowing for its wider use. The ICT sector has the potential to offer much-needed fast solutions in various fields. With the many development challenges, fast solutions are needed using ICT, and a distributed co-creation model involving all stakeholders. Governments might need encouragement to start something new and increase their engagement through partnerships, and institutions could have incentives to increase research that addresses local and regional needs.

31. Questions raised included the following: how could investors know the ICT sector's internal rate of return? How to spot trends that indicate if the sector is attractive for investment? Indices should be set, and it might be advisable to have a strategy and dedicated stock market that enables entry with low capital requirements. An exit strategy could also be defined in the stock market, as it would encourage people to allocate funds. Also, the bankruptcy law and personal data protection should be addressed together with the issue of intellectual property rights.

32. Participants reaffirmed the role of civil society organizations and consumers in the decision-making process towards adapting regulatory frameworks for ICT investments, whether in terms of considering their opinions and interest or engaging them within a multi-stakeholder process. They also raised the need to consider the freedom of access to information as a law in order enable more transparency in investments.

III. ORGANIZATION OF WORK

A. DATE AND VENUE

33. The meeting was held from 7 to 8 May 2013 in Hammamet, Tunisia.

B. OPENING

34. The opening session included three statements, delivered by the representatives of ESCWA, UAB and the Tunisian Ministry of ICTs.

35. Mr. Ayman el-Sherbiny delivered the opening remarks on behalf of ESCWA. He highlighted the important role of the ICT sector in job creation, economic growth and socioeconomic development. He stressed the need to develop appropriate financing mechanisms that suit the sector and are coupled with national policies that promote competitiveness, and support innovation and business entrepreneurship as essential elements for knowledge-based economies. On RDI, the speaker pointed to the different emerging forms of innovation, such as open innovation, clusters, hubs, platforms and living labs; and to the convergence between telecommunications, information technology and media, and between infrastructure and the higher application layers. These changes, together with the rise of new opportunities from mobile applications and cloud computing are enabling more cooperation and wider participation, and leading to new business models. In spite of the importance of innovation, a key challenge lies in measuring its impact. This requires cooperation between the various stakeholders, including companies, universities, research centres, financial institutions and Governments. The speaker summarized the objectives and main themes of the ESCWA study on Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives, and invited participants to review its content and provide feedback during the meeting.

36. Ms. Dina Kaddouh, Director of the Union of Arab Banks Regional Office for Maghreb Countries, delivered the opening statement on behalf of UAB. She reviewed the objectives of cooperation between ESCWA and UAB, which aims to develop a plan that enables the Arab banks to take a key role in mobilizing the financial resources needed to develop investments in the ICT sector and strengthen RDI in the Arab region. The Union was established in 1974 as an Arab regional organization. It operates under the umbrella of the League of Arab States, and counts more than 340 members, including the largest Arab banking and financial institutions. Through its regional and international activities, it seeks to foster cooperation between its members and the international banking and financial communities to develop networking and investment

opportunities between the Arab region and the international marketplace, and to strengthen the role of the Arab financing and banking institutions in the global development process. The speaker noted that UAB realizes the importance of the ICT sector, and that banks in the region have reservations about financing projects in the ICT sector with its fast production and development cycles seen as risky. Through collaboration with ESCWA, UAB hopes to work towards enabling Arab banks to contribute to financing ICT and RDI in the region, leading to developing the production process and new dynamics for economic development.

37. Mr. Mongi Thameur, Cabinet Chief of the Tunisian Ministry of ICTs, delivered the opening statement on behalf of the Ministry. He said that the progress of societies can be measured by the adoption of modern technologies and integration within the growing world of ICT. The economic growth in many successful global experiences was based on the technological development, which in turn contributed to creating job opportunities and attracting investments. This has raised interest in developing ICT education curricula and RDI activities. He highlighted the four basic pillar systems for innovation: education, research, industry and policy; he also stressed the need for applied field research that addresses local priorities and needs, in addition to the existing theoretical research in areas that benefit different sectors. Emphasizing the role of the private sector in economic growth and job creation, the speaker stressed the need to promote innovation and support the existing human capital in small and medium enterprises. He stressed the importance of setting national strategies that support the engagement of all stakeholders and set an enabling environment for national innovation systems.

C. PARTICIPANTS

38. The meeting was attended by around 40 experts from the public and private sectors, civil society and academia, including government officials from ICT ministries and authorities, ICT entrepreneurs and company managers, as well as representatives from international and regional organizations, the banking sector, research centres and incubators and investment firms in ESCWA member States. The list of participants is contained in the annex to this report.

D. AGENDA

39. The agenda of the meeting included the following main sessions:

- (a) Opening;
- (b) Competitiveness of the ICT sector and its contribution to the knowledge-based economy;
- (c) Investment ecosystem of the ICT sector – regional/national perspectives;
- (d) RDI ecosystem of the ICT sector – global/regional perspectives;
- (e) Competitiveness of the ICT sector;
- (f) RDI in the ICT sector;
- (g) Investment in the ICT sector – global and regional perspectives;
- (h) Vision and way forward.

E. DOCUMENTS

40. The documents of the meeting are available on the ESCWA website: <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=2118E>.

LIST OF PARTICIPANTS

Algeria

Ms. Aicha Bouzidi, Advisor
Ministry of Post and Information and
Communication
E-mail: a_bouzidi@mptic.dz

Bahrain

Mr. Mohamad Allam al-Qaed, Head of BBIC and
Coordinator of MENAinc
Bahrain Business Incubator Centre
E-mail: m3allam@gmail.com
mallam@bdb-bh.com

Egypt

Ms. Nagwa I. el-Shenawy
Director of Information Center
E-mail: nagwash@mcit.gov.eg

Mr. Hosein Badran, Board Member
National Telecommunications Institute
E-mail: hoseinb@hotmail.com

France

Mr. Charly Bechara, Research and Development
Engineer
Institut CARNOT CEA LIST
E-mail: charly.bechara@cea.fr

Mr. Omar Hammami, Professor
ENSTA PARISTECH
E-mail: hammami@ensta.fr

Mr. Piotr Strykowski, Economist
Directorate for Science, Technology and Industry
Organisation for Economic Co-operation and
Development (OECD)
E-mail: piotr.strykowski@oecd.org

Italy

Mr. Andrea Renda, Professor of Law and
Economics
LUISS Guido Carli University, Rome
E-mail: arend@luiss.it, andrea.renda@ceps.eu

Jordan

Mr. Hisham al-Qattan, Member of Board of
Directors and ICT Representative
Jordan Chamber of Commerce
E-mail: hq@jocc.org.jo
hqjordan@hotmail.com

Mr. Nader al-Thneibat, Secretary General
Ministry of Information and Communications
Technology
E-mail: Nader.Thneibat@moict.gov.jo

Lebanon

Mr. Fares Kobeissi, President
Association of the Lebanese Software Industry
E-mail: fares.kobeissi@bluering.com

Mr. Ibrahim Akoum, Associate Professor
Hariri Canadian University
E-mail: akoumif@hcu.edu.lb
akoum2002@hotmail.com

Morocco

Mr. Ilyas Azzoui, Chief Engineer and Incubator
Manager, Morocco incubator
National Centre for Scientific and Technical
Research
E-mail: azzioui@cnrst.ma
Directeur@cnrst.ma

Pakistan

Mr. Fouad Bajwa, Advisor, Consultant and
Researcher (ICT4D and Internet Public Policy)
E-mail: fouadbajwa@gmail.com

Palestine

Mr. Suhail Madoukh (Madouh), ICT Expert
E-mail: smadoukh@gov.ps

Mr. Jawdat Abu Taha, Investment Consultant
Scholl-Heuter
E-mail: jtaha@iugaza.edu.ps
kensington@scholl-heuter.at

* Issued as submitted.

Qatar

Mr. Shareef M. Batata, Associate Director, SME Programs
Silatech
E-mail: smbatata@silatech.com

Saudi Arabia

Mr. Abdulmohsen Aleisa, Director of Incubation Services
BADIR Program for Technology Incubators
E-mail: aaleisa@badir.com.sa

Mr. Khaled AlBulaihed, CEO
Knowledge Industry Co.
E-mail: info@knowledge-industry.com
khaled@Knowledge-Industry.com

Sudan

Mr. Adil Abdelaziz Elfaki Hassan, President of SSIT and Chief Economic Sector of Ministry of Finance - Khartoum
Sudanese Society for Information Technology (SSIT)
E-mail: adilalfaki@hotmail.com

Mr. Nasr Eldin Mohamed Elhassan, Computer Engineer, National Information Center
Ministry of Science and Telecommunications
E-mail: nasr30@yahoo.com
nasr@nic.gov.sd

Tunisia

Ms. Aicha Ennaifar, General Director
DIVA SICAR - Groupe Tunisie Telecom
E-mail: aicha.ennaifar@divasicar.tn

Mr. Housseem Aouadi, Entrepreneur SYNSYS company
Elgazela Technopole
E-mail: aouadi.housseem@gmail.com

Mr. Jalel Tebib, Advanced Technologies Promotion Director
Foreign Investment Promotion Agency (FIPA) - Tunisia
E-mail: jalel.tebib@fipa.tn
boc@fipa.tn

Mr. Kais Sallami, President
National Federation of ICT, Tunisia
E-mail: kais.sellami@discovery.com.tn

Mr. Mondher Khanfir, Co-founder and CEO
WIKI START UP
E-mail: info@wikistartup.tn
mk@wikistartup.tn
mondher.khanfir@gmail.com

Mr. Mustapha Mezghani, Senior Executive
2CW - Conseil Communication et Web @CW
E-mail: mustapha.mezghani@2cw.com.tn

Ms. Neziha Berzouga, Offshoring Promotion Department Head
Foreign Investment Promotion Agency (FIPA) - Tunisia, Ministry of Development and International Cooperation
E-mail: neziha.berzouga@fipa.tn
boc@fipa.tn

Mr. Nizar Alaya, Advisor of the Head of the Government
Prime Minister's Office - Tunisia
E-mail: nizar.alaya@pm.gov.tn

Mr. Ridha Guellouz, President
Tunisian Association of Information and Communication Technology (ATTIC)
E-mail: r.guellouz@yahoo.fr

United Arab Emirates

Dr. Nabih Mousa, Senior Vice President
Dubai Financial Market
E-mail: nyousef@dfm.ae
nyomousa@hotmail.com

Yemen

Mr Kamal H. Masoud, General Manager of Information Technology, Focal Point of ESCWA
Ministry of Planning and International Cooperation
E-mail: kamalmasoud@hotmail.com

Ministry of Information and Communication
Technologies - Tunisia

H.E. Mr. Mongi Marzoug, Minister of ICTs,
Government of Tunisia

Mr. Mongi Thameur, Cabinet Chief
E-mail: mongi.thameur@mincom.tn

Mr. Fethi Choubani, Advisor of ICT Minister
E-mail: fethi.choubani@mincom.tn

Union of Arab Banks

Ms. Dina Kaddouh, Director, Regional Office for
Maghreb Countries
Union of Arab Banks
E-mail: dina@uabonline.org

Economic and Social Commission for Western
Asia

Mr. Ayman el-Sherbiny
First IT Officer, ICT Policies
ICT Division
E-mail: el-sherbiny@un.org

Mr. Fouad Mrad, Executive Director
ESCWA Technology Centre (Amman)
ICT Division
E-mail: mrad@un.org

Mr. George Younes, First IT Officer, ICT Policies
ICT Division
E-mail: younesg@un.org

Ms. Mirna Barbar, IT Officer, ICT Policies
ICT Division
E-mail: barbarm@un.org

Ms. Zahr Bou-Ghanem, Research Assistant
ICT Division
E-mail: bou-ghanem@un.org