

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

**REGIONAL PLAN OF ACTION FOR BUILDING
THE INFORMATION SOCIETY**

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ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

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Executive summary

The plan of action for building the information society in Western Asia was prepared by the United Nations Economic and Social Commission for Western Asia (ESCWA), through its Information and Communication Technology Division as follow-up to the first phase of the World Summit on the Information Society (WSIS), held in Geneva from 10 to 12 December 2003.

The plan of action for building the information society in Western Asia, or Regional Plan of Action, takes into consideration the challenges associated with maintaining an integrated and sustainable effort for building the information society in the region and translates these challenges into specific programmes and projects. Implementation of these programmes and projects would require efficient coordination and effective partnership among concerned organizations but would have the benefit of strengthening inter-Arab cooperation in a framework of partnership that embraces all stakeholders.

The collaborative efforts expended at the regional and international levels that resulted in the Regional Plan of Action (RPoA) are listed in chronological order, as follows:

(a) Adoption by the Arab Summit in 2002 of the Arab Information and Communication Technology Strategy;¹

(b) The Cairo Declaration and the document entitled "Towards an Arab Information Society: A Framework for Collaborative Action" issued by the Pan-Arab Regional Conference on WSIS held in Cairo from 16 to 18 June 2003;

(c) Production by ESCWA of the Tentative Plan of Action for Western Asia: Building the Regional Information Society (E/ESCWA/ICTD/2003/12) in November 2003;

(d) The Global Plan of Action resulting from the Geneva phase of WSIS (WSIS-03/GENEVA/DOC/5-E);

(e) Organization by ESCWA of a series of round tables during 2004,² in particular the round table on Strategies and Plans of Action for Building the Information Society in Western Asia, held in Beirut, 21-22 June 2004, the objective of which was to reach consensus on a suitable plan of action for building the information society in the region and the relevant national and regional activities. The projects and programmes resulting from the series were used in the development of the RPoA;

(f) Production by the Task Force on Implementation of the Arab Telecommunications and Information Strategy of a list of six government priority projects,³ based on a scoring process and priorities set by the Council of Arab Telecommunications and Information Ministers and included in the RPoA as priority government projects;

(g) The Second Regional Preparatory Conference for WSIS held in Damascus, 22-23 November 2004 in order to discuss the Proposed Regional Plan of Action for Building the Information Society (E/ESCWA/ICTD/2004/4) resulted in feedback, including the Damascus Call for Partnership, vital for the revision and improvement of the RPoA.

The flexibility and extensibility of the RPoA are articulated through the adoption of a modular scheme based on programmes and projects designed to trigger partnerships in ESCWA member countries and induce the interactive participation of a broad spectrum of stakeholders. As such, the RPoA could evolve to assimilate the future needs of a variety of stakeholders in ESCWA member countries, incorporating new

¹ League of Arab States, resolution 214 of 28 March 2002. Available at: <http://www.atimc.org.eg>.

² Details of the series are available at: <http://www.escwa.org.lb/wsisis/>.

³ Report and recommendations of the third meeting of the Task Force on Implementation of the Arab Telecommunications and Information Strategy (Cairo, 27-29 September 2004) (G15-08/03(04/09)/02 - T(0440)).

information and communication technology (ICT) innovations and becoming part of the mechanism for the promotion of effective partnerships.

The present document outlines a comprehensive strategic framework that aims to create adequate indigenous capabilities for harnessing information and knowledge, so contributing to building ICT production capabilities and promoting the development of the information society in the region. The proposed strategic framework is based on ten key areas, partnership programmes and regional projects.

The key areas, mainly derived from the Global Plan of Action and designated within the RPoA, address a multitude of issues and constitute the core of the strategic framework are as follows:

- (a) Policies and strategies;
- (b) ICT infrastructure;
- (c) Access to information and knowledge;
- (d) Capacity-building;
- (e) Building confidence, trust and security;
- (f) Enabling environment;
- (g) ICT applications;
- (h) Cultural, linguistic and local content;
- (i) Media;
- (j) International and regional cooperation.

Actions in these key areas, which constitute the main pillars for the promotion of a sustainable information society, will ultimately contribute to building the capabilities needed in order to harness ICT for socio-economic development. A set of objectives are identified in each area and associated with a number of high-impact, strategic lines of action selected with a view to regional realities and extending over a period of time to 2015.

Partnership programmes, envisaged as a means of identifying and promoting a number of regional projects, are designed with the aim of instigating fruitful partnerships and securing the necessary resources for the production of tangible incentives for the move towards a regional information and knowledge society. The programmes supplement the areas of the strategic framework with well-defined endeavours in such a way that each programme serves one or more areas.

Programmes are elaborated on the basis of a results-based management approach and are mapped to the areas of the strategic framework. Thus, the core programme description is presented in concise form including the main objective, challenges, implementation strategy, expected accomplishments and indicators of achievement.

Regional projects are the building blocks for developing an integrated information society and aim to deliver realistic solutions for a range of problems over varying time-frames in the process of promoting the information society in the region. The majority of regional projects have national components with specific pilot projects in selected ESCWA member countries. A review of the efforts completed by the Task Force on the Implementation of the Arab Telecommunications and Information Strategy and the resultant list of projects recommended by the Task Force for inclusion in the RPoA are presented as regional priority projects for Arab Governments.

Moreover, the RPoA sets out the criteria for reaching the maturity required in order to implement projects successfully and facilitate the participation of parties interested in proposing and/or implementing projects aimed at developing the information society in the region.

Funds needed to implement the RPoA are addressed at the project level. The estimated costs of regional project proposals varies from tens of thousands to several million US dollars, although the majority of projects are estimated at between US\$ 300,000 and US\$ 1,000,000. Through project level budgeting, the RPoA prepares for greater transparency and improved accountability in building the regional information

society within a framework based on multi-stakeholder partnerships. Contributions to implementation of the proposed regional projects could take forms other than financial inputs, such as in-kind contributions.

A model for partnerships in promoting and building the information society in the region is proposed. The model involves high-impact entrepreneurs, mature national, regional and international firms, governments, universities, investors, donors and international and regional organizations. A number of modalities for implementing the above partnerships are presented, with special emphasis on attracting investors and donors. Furthermore, a partnership scheme is recommended, together with modalities for implementing projects, monitoring progress and evaluating results.

Last but not least, it stands to reason that a plan of action for building the information society in the region would acquire wider support and be of greater benefit if it were to address the needs of all Arab countries rather than being confined to ESCWA member countries. The inclusion of all Arab countries would lead to a more efficient process of developing an information society and would avoid duplication and achieve more effective sharing and allocation of resources. The common language and culture of the Arab countries would bring together a wider range of stakeholders with a shared interest in building a regional information society. The design of the plan of action and the different areas of focus would provide a common denominator for serving ESCWA member countries as well as Arab countries. In view of the above, ESCWA presented the RPoA to the Arab Working Group for WSIS Preparation formed by the Council of Arab Telecommunications and Information Ministers established by the League of Arab States, for consideration in the development of an Arab plan of action for building the information society.

ABBREVIATIONS AND ACRONYMS

ADNTF	Arabic Domain Names Task Force
GCC	Gulf Cooperation Council
ADNS	Arabic Domain Name System
DAC	Digital Arabic content
EMR	electronic medical records
FDI	foreign direct investment
GAFTA	Greater Arab Free Trade Area
GDP	gross domestic product
ICT	information and communication technology
IPO	ICT Partnership Online
ITSAM	Integrated Transport System in the Arabic Mashreq
ICANN	Internet Corporation for Assigned Names and Numbers
MoU	Memorandum of Understanding
MSP	multi-sector partnership
OSS	open-source software
PPP	private and public partnership
SME	small and medium-sized enterprises
NGOs	non-governmental organizations

I. INTRODUCTION: FROM GLOBAL TO REGIONAL

A. PREMISES

The plan of action for building the information society in Western Asia, or Regional Plan of Action fills a critical void. It outlines the ways in which global and regional information communication technology (ICT) strategies could stimulate change at the regional and national levels and offers a comprehensive framework for translating these strategies into ICT projects that create value and progress towards a sustainable regional information society. The premise of the RPoA is that improved ICT is primarily a question of commitment to deep process changes that require sustained efforts and could bring clear rewards.

The RPoA is the result of collaborative efforts at the regional and international levels in addition to input from national initiatives. Foremost among these efforts are the Global Plan of Action resulting from the Geneva phase of WSIS (WSIS-03/GENEVA/DOC/5-E) and the Arab ICT Strategy adopted by the Arab Summit in 2002.⁴ Moreover, the RPoA takes into consideration the efforts of the Pan-Arab Regional Conference on WSIS held in Cairo from 16 to 18 June 2003. The Cairo Declaration, "Towards an Arab Information Society: A Framework for Collaborative Action" was produced at this meeting and endorsed by the Arab Council of Ministers of Communications and Information at its seventh ordinary session.

The Tentative Plan of Action for Western Asia: Building the Regional Information Society (E/ESCWA/ICTD/2003/12) produced by ESCWA in November 2003 included a list of action lines and time frames and constituted the basis for discussions. Regional specificity, a key issue contributing to the formulation of the RPoA, was addressed through a series of round tables organized by ESCWA during 2004,⁵ in particular the round table on Strategies and Plans of Action for Building the Information Society in Western Asia, the objective of which was to reach consensus on a suitable plan of action for building the information society in the region and the relevant national and regional activities. The projects and programmes resulting from the series were used in the development of the RPoA. The Second Regional Preparatory Conference for WSIS was held by ESCWA in Damascus, 22-23 November 2004, in order to discuss the Proposed Regional Plan of Action for Building the Information Society (E/ESCWA/ICTD/2004/4). Feedback from the conference was vital for the revision and improvement of the RPoA.

A rational RPoA should be constructed based on the consolidated results and recommendations of the meetings mentioned above in order to ensure that it can meet the development goals set out in the Millennium Declaration, which emphasizes the importance of ICTs in the achievement of socio-economic development goals and affirms the need to ensure that the benefits of new technologies and, in particular, ICTs, are available to all.⁶ In view of this objective, the foundations for national, regional and international cooperation should be laid during the period ending 2015.

B. CONSIDERATIONS OF THE RPOA

The present document considers the challenges associated with maintaining an integrated and sustainable effort to build the information society in the region and translates these challenges into specific programmes, with the aim of strengthening inter-Arab cooperation in a framework of partnership that embraces all stakeholders. To that end, a modular structure is adopted that can accommodate new elements, as the RPoA is based on an evolving model that can assimilate the future needs of ESCWA member countries and, also, includes a mechanism for the periodic introduction of new regional strategic actions and the adjustment of plans according to progress reports. The following paragraphs provide a brief description of the distinctive features of the RPoA.

⁴ League of Arab States, resolution 214 of 28 March 2002. Available at: <http://www.atcm.org.eg>.

⁵ Details of the series are available at: <http://www.escwa.org.lb/wsis/>.

⁶ Available at: <http://www.un.org/millenniumgoals>.

Partnership. Partnership is the basis for the development and implementation of the RPoA, which advocates and fosters the creation of a coalition of public and private organizations and individuals in building the information society in the region. Partnership leads to a more responsive, enabling and participatory state for the management and planning of development activities as society becomes more complex.

Decentralization. The emergence of partnership strategies have brought about new ways of managing development programmes and projects that shift emphasis away from central planning and centralized authority.

Results-based management. The results-based management system places high emphasis on the achievement of results and uses indicators to monitor progress. The system enables organizations to focus on development rather than become consumed by the process of transferring resources and encourages them to act in a proactive, rather than reactive, manner. (For further information on results-based management, see annex I).

Modularity. The modular form of the RPoA makes it possible to address the requirements of stakeholders in a structured manner, where independent and self-contained modules are combined to forge a comprehensive RPoA. This feature provides the flexibility necessary to address the challenges of building the regional information society and promote partnerships.

Open-endedness. Unlike 5- or 10-year plans, the RPoA is open in terms of scale and has no specific ending date. It is an evolving plan that can accommodate ad hoc elements in order to meet unforeseen requirements or adjust to assimilate new technological innovations.

Rolling projects. This feature allows the RPoA to be open-ended. As needs evolve and projects are completed, new projects can be introduced that build on the results achieved by previous completed projects.

Leading responsibility. Leading responsibility is based on structuring the RPoA in a manner that enables organizations to coordinate programmes and champions to adopt and implement projects. Leading responsibilities come into existence as new programmes and projects are added and supplement partnership and decentralization.

Implementation upon maturity. This is a key characteristic for the implementation of the RPoA. In this context, maturity refers to the development of comprehensive project documents, completion of partnerships subscription, securing of necessary funds and allocation of the resources needed to start implementation.

Periodic monitoring and progress reporting. Together, periodic monitoring and progress reporting constitute the main monitoring tool for implementation of the RPoA and, at the same time, ensure continuity and evolution.

Online partnership. Online partnership enables the RPoA to cater for additional partnership subscription for existing or additional programmes or projects without needing to organize regional meetings or be subject to limitations of space and location. This feature lends dynamism to the RPoA.

C. PROPOSED STRUCTURE OF THE RPOA

The flexible modular design of the RPoA is based on programmes in those areas identified as being of fundamental importance for building a sustainable information society in the region. Each programme has a coordinating institution in order to ensure the compatibility and consistency of the programme content and coordinate its various components, which are well-defined projects each with a lead agency responsible for its execution and partners, including donor agencies, implementing institutions and beneficiaries. When all partners in a partnership scheme are ready to carry out their part, then the mature project proposal is launched. The list of projects can grow as projects mature and new projects and programmes are added.

The present document takes a top-down approach and starts by considering the RPoA from a global and regional perspective in chapter one. It first outlines a strategic framework and then recommends and elaborates the main functionalities of a number of programmes specifically designed to trigger partnerships in ESCWA member countries and induce the interactive participation of a broad spectrum of stakeholders. Guiding principles for the definition of regional and national projects related to the various programmes are presented. Finally, a number of partnership and financing considerations are discussed.

Chapter two proposes a strategic framework with ten areas through which the critical indigenous capabilities needed to harness information and knowledge locally can be developed. These ten areas constitute the main pillars of the development of a sustainable knowledge economy and information society. Each area identifies a set of objectives associated with a number of high-impact strategic action lines entrenched in regional realities. The Global Plan of Action was an important source for definition of these ten areas. Comparisons and overlaps between these areas and the seven axes of the Arab ICT Strategy are also considered.

Chapter three recommends programmes that meet regional requirements and embody the potential of harnessing ICT for socio-economic development. The programmes supplement the areas of the strategic framework with well-defined endeavours. Each programme is succinctly described in two pages and linked to the strategic framework and indicators of achievement. Projects are related to the various programmes and the open-ended structure ensures that partners can propose new projects during the implementation process. Projects are regional in nature but necessarily have national components. Some are short-term and others long-term projects but all conform with the Millennium Development Goals. These projects will constitute the building blocks for developing the information society.

Chapter four is dedicated to the development of the RPoA into regional projects for building the information society. It provides criteria for reaching the maturity needed in order to ensure a good start for project implementation and facilitate the participation of parties interested in proposing and/or implementing projects that aim to build the information society in the region. A list of proposed regional projects for each programme recommended in chapter three is then presented. The chapter ends with a review of the efforts of the Task Force on Implementation of the Arab Telecommunications and Information Strategy and the resultant list of regional priority projects that the Task Force is recommending for inclusion in the RPoA.

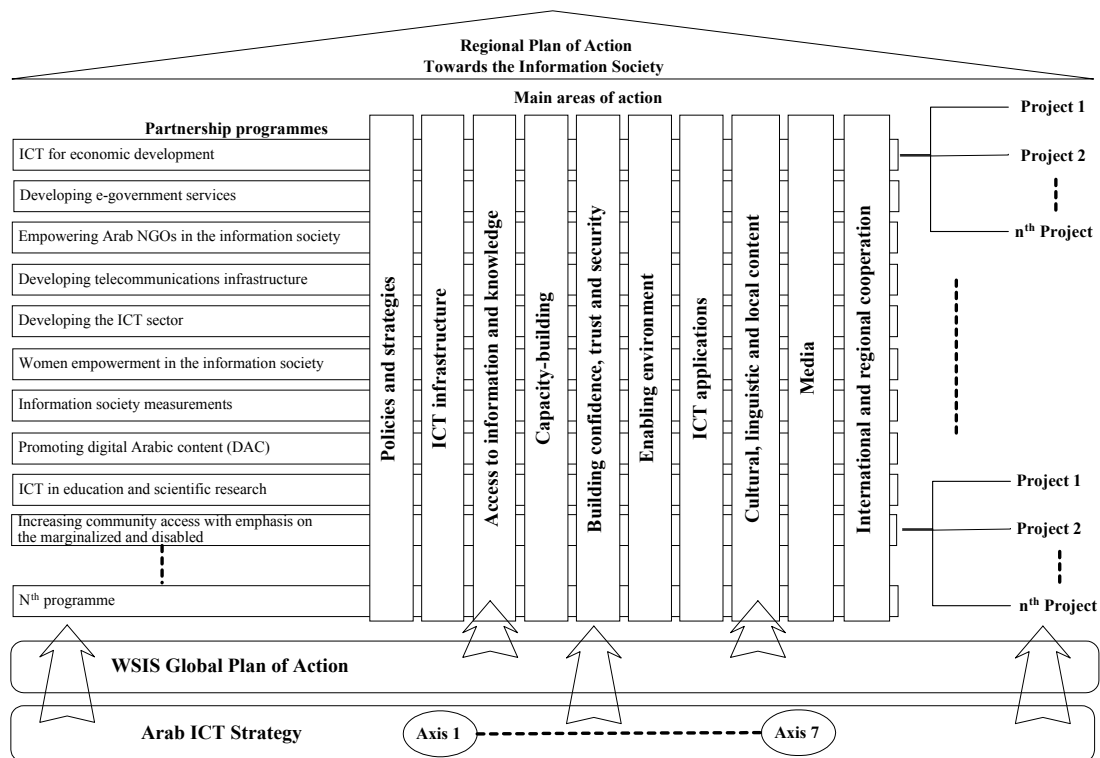
Chapter five shows the need for building partnerships in ICT with a view to supporting a high rate of start-up businesses in the region. Partnerships, entrepreneurships and venture capital should be added to the list of reform activities. Guiding principles for partnership are also outlined and a model presented for partnership and financing projects involving government, business community, non-governmental organizations (NGOs), civil society, educational and financing institutions.

II. STRATEGIC FRAMEWORK

A. INTRODUCTION

This chapter sets out a comprehensive strategic framework that aims to create adequate indigenous capabilities for harnessing information and knowledge, so contributing to building the information society and enhancing development in the region. The framework is made up of several components, chiefly a set of partnership programmes in ten main areas for action that constitute the main pillars for supporting the development of a sustainable information society (see figure I). Each area identifies a set of objectives associated with a number of high-impact strategic actions lines entrenched in regional realities. The areas identified in the strategic framework are derived from the Global Plan of Action and serve the seven axes of the Arab ICT Strategy.

Figure I. General layout of the strategic framework



Source: ICTD, ESCWA.

The proposed areas of actions intersect with the partnership programmes in such a way that each programme has one or more dominant areas of focus. The programmes are discussed in detail in chapter three. The programmes supplement the areas of action with well-defined endeavours and aim to trigger partnerships and induce the interactive participation of stakeholders. Similarly, each programme will include a number of projects which are the building blocks for developing the information society.

Two complementary approaches have been followed in the process of selection of proposed projects. The first approach was that followed by the Task Force on Implementation of the Arab Telecommunications and Information Strategy that resulted in six priority regional projects, in the advancement of the implementation of which Arab governments are urged to cooperate. This approach was based on a scoring process and priorities set by the Council of Arab Telecommunications and Information Ministers. The other approach, derived from the partnership scheme, enables stakeholders to contribute and participate in building the information society. The projects considered in the second approach are not necessarily a priority for governments, even though most projects have specific national components. The implementation of these

non-prioritized projects is contingent upon satisfying a number of criteria known as “implementation upon maturity” and elaborated in chapter 4. These two approaches for including projects in the RPoA are complementary in that they allow governmental discretion while providing the needed flexibility to incorporate additional projects by other major stakeholders, whether local, regional or international.

B. MAIN AREAS OF FOCUS

Building the information society and taking advantage of the opportunities offered by ICT presupposes inherent capabilities in a number of areas. With this in mind, the strategic framework aims to streamline actions at the regional level and promote the development of national capacities for achieving the transition to the information society. It puts forward a plan with a number of strategic action lines to achieve significant changes in various areas and at a number of levels of intervention, with a view to serving women, youth, the elderly and special segments of the population such as impoverished communities and the disabled.

The ten areas at the core of the strategic framework address a multitude of issues and will ultimately contribute to the creation of adequate indigenous capabilities for harnessing ICT for socio-economic development and pave the way for the development of the information society. An overview of the ten areas is summarized below (see E/ESCWA/ICTD/2003/12).

1. *Policies and strategies.* This is a preliminary area for the promotion of ICT for development. The process of adopting proper policies and formulating strategies are essential for mobilizing all stakeholders from a cross-section of the public and private sectors and disseminating the opportunities created by the information society.
2. *ICT infrastructure.* This infrastructure is essential in order to reduce the digital divide by providing universal, sustainable and affordable connectivity and access to all, in particular remote and marginalized areas at national and regional levels.
3. *Access to information and knowledge.* ICT is a tool that enables and facilitates access to information and knowledge and, so, empowers individuals, organizations and communities. This area aims to promote public domain information and increase access to information and knowledge.
4. *Capacity-building.* This area develops the skills necessary in order to benefit fully from the information society. Capacity-building with regard to ICT is a main pillar of sustainable development of the information society and encompasses all people.
5. *Building confidence, trust and security.* The sensitivity and value of digital information and the need to protect it are increasing. This area tackles specific requirements with regard to security and privacy, in particular the protection of personal data in the case of individuals and confidential information in the case of enterprises.
6. *Enabling environment.* The provision of an enabling environment is crucial in order to mobilize resources and create a climate conducive to the acquisition and dissemination of ICT. Moreover, legislative and regulatory frameworks constitute essential bases for cooperation between the public and private sectors.
7. *ICT applications.* This area acknowledges the importance of developing ICT thematic applications for building the information society in the fields of e-government, e-commerce, e-learning, e-health, and e-employment.
8. *Cultural, linguistic and local content.* Digital content, particularly on the Internet, preserves the language, facilitates its evolution and promotes cultural diversity while sustaining socio-economic development. In addition, digital content development can play a major role in preserving national heritage.
9. *Media.* The media plays an important role in promoting the information society and contributing to freedom of expression and plurality of information as it reaches wide audiences and disseminates information.

10. *International and regional cooperation.* The successful implementation of the information society requires cooperation among all stakeholders at both an international and regional level. This area strengthens the establishment of multi-stakeholder dialogue and promotes private and public partnership as well as multi-sector partnership.

C. THE ARAB ICT STRATEGY AND THE FRAMEWORK FOR COLLABORATIVE ACTION

The Amman Arab Summit adopted the Arab ICT Strategy through resolution 214 of March 2002 and called for its development into a plan of action and plausible activities. The Arab ICT Strategy, prepared prior to the Global Plan of Action, proposes seven axes for building the information society. These axes form the goals that the RPoA areas aim to fulfil through the proposed action lines, programmes and projects.

Moreover, the themes and actions recommended in the Framework for Collaborative Action adopted by the Pan-Arab Regional Conference on WSIS and endorsed by the Arab Council of Ministers of Communications and Information were deliberately taken into consideration while formulating the RPoA. The action lines specified in the Framework have been included in the RPoA and specific reference is made in the RPoA to actions derived from the Arab ICT Strategy or the Framework.

The following is a list of the themes covered in the Framework:

- (a) Recognizing the role of ICT in development;
- (b) Creating a favourable and responsive multi-segment environment;
- (c) Policies and legislation;
- (d) Determining indicators;
- (e) Regional integration;
- (f) Planning for integration and building a regional information infrastructure;
- (g) Universal access to information and knowledge;
- (h) Capacity-building: human resources development, education, and training;
- (i) Networks and information security;
- (j) Software piracy and its relation to the economy;
- (k) Serving citizens;
- (l) Bringing governments into the digital age, serving citizens and poverty reduction;
- (m) Supporting culturally diverse and multilingual content;
- (n) Preserving the region's information and audiovisual heritage;
- (o) Trade and commerce in the information society;
- (p) Research and development;
- (q) Cooperation and funding in the field of ICT;
- (r) Using NGOs and civil society as agents of change.

D. ACTION LINES

The areas of the strategic framework complement one another and would be most effective when launched simultaneously, in order to achieve optimal coordination. Changes in emphasis could be introduced that would take into account specific conditions and priorities. During implementation, the centre of gravity could shift from one area to another as dictated by progress and specific regional priorities.

The framework around which the RPoA has been built is flexible and capable of accommodating future lines of action. In this regard, the following non-exhaustive list of actions could be launched in parallel, amended to fit regional, sub-regional or national priority areas, extended to include innovations in the field of ICT and implemented at different times according to changes in expected accomplishments and

indicators of achievement. The entities responsible for carrying out these action lines would be governments, through their Ministries of Telecommunications and Information Technology, national ICT councils or other entities, depending on the preference of each country. Collaboration with international and regional organizations with a thorough knowledge of the region, such as ESCWA, the United Nations Educational, Scientific and Cultural Organization (UNESCO) or United Nations Development Programme (UNDP) is highly recommended in building the information society. It is also envisaged that each country would, eventually, select the action lines most suitable for its needs, set priorities, adjust the time frame and assign an entity responsible for implementation of each action.

AREA 1. POLICIES AND STRATEGIES

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To formulate policies for building the information society	1.1. To enhance capacity of ICT policy development	1.1.1. Conduct awareness campaign, deliver meetings and organize workshops to present policy targets, recommendations and promotion material based on case studies and evaluations	ST	Number of national policies for building the information society
		1.1.2. Ensure that best practices are exchanged among ESCWA member countries and with the international ICT community ^{a/}		
2. To develop e-strategies	2.1. To enhance capacity of national Government to develop and adopt strategies for building the information society	2.1.1. Conduct national e-readiness assessment	ST	Number of countries adopting e-strategies
		2.1.2. Develop national e-strategies	ST	

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

AREA 2. ICT INFRASTRUCTURE

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To develop national broadband backbone infrastructure	1.1. To increase national bandwidth with a view to develop broadband access	1.1.1. Develop an affordable, secure and reliable ICT infrastructure at the national level with efficient connectivity to a regional Internet backbone	ST	Number of countries with broadband infrastructure
2. To provide affordable and reliable ICT infrastructure to isolated segments of the population, in particular in rural areas	2.1. To provide telecommunications and Internet services to communities that have no connection	2.1.1. Deliver necessary telecommunications infrastructure to rural areas with a target to cover 80 per cent of the population ^{a/}	MT	Increase in telecommunications penetration rate, such as fixed lines per 100 inhabitants and mobile lines per 100 inhabitants

AREA 2 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		2.1.2. Consider wireless communication technologies as strategic substitutes to fixed-line technologies in addition to using available satellite capacity	MT	Increase in Internet users and subscribers
		2.1.3. Offer incentive schemes to encourage private sector, such as Internet service providers, to target this neglected segment of the market and provide affordable services	MT	Increase in Internet service providers servicing neglected segment of the market
3. To foster regional integration through cooperation among member countries in order to adopt compatible and scalable solutions	3.1. To provide low-cost regional data and voice communications	3.1.1. Conduct adequate studies to assess current conditions of regional/national infrastructure as well as planning and financing the regional backbone ^{a/}	LT	Number of countries in the region connected through a backbone
		3.1.2. Develop a regional broadband backbone infrastructure that handles all regional traffic and offers competitive prices vis-à-vis existing global backbones ^{b/}		

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

^{b/} Arab ICT Strategy, available at: <http://www.aticm.org.eg>.

AREA 3. ACCESS TO INFORMATION AND KNOWLEDGE

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To emphasize the importance of accessing information and building knowledge	1.1. To develop a culture for seeking information	1.1.1. Promote in educational institutions and the media the importance of access to information and knowledge	MT	Number of countries with increased access to information
2. To increase access to information and knowledge	2.1. To enhance capacity of national Government to develop and adopt strategies for increasing access to information and knowledge	2.1.1. Develop strategies for the promotion of affordable connectivity	ST	Number of countries adopting strategies for affordable connectivity
		2.1.2. Promote better conditions region-wide for increasing access to information and knowledge	ST	Increase in Digital Access Index of the International Telecommunication Union

AREA 3 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
	2.2. To facilitate access to information and knowledge	2.2.1. Implement and support sustainable public and community access points, including Internet kiosks, e-libraries, and community ICT centres ^{a/}	ST	Number of sustainable public and community access points
		2.2.2. Develop affordable technologies and non-text-based computer interfaces to facilitate public access to ICT ^{b/}	MT	Number of affordable technologies and computer interfaces that facilitate public access to ICT

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

^{b/} See the Global Plan of Action (WSIS-03/GENEVA/DOC/5-E).

AREA 4. ICT CAPACITY-BUILDING

Capacity-building for the region goes beyond expanding basic ICT skills among the population by actually developing expertise in various ICT fields. The proposed model for ICT capacity-building is based on developing three areas, namely, human resources, research and development and ICT enterprises. Women, youth, the elderly and the disabled are given particular consideration in order to safeguard their inclusion in the information society.

1. *Human resources development*

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To provide school students with adequate skills required to actively participate in the information society	1.1. To reduce ICT illiteracy in schools	1.1.1. Establish computer labs in public schools to provide training and Internet access to the community	ST	Number of schools with computer labs
		1.1.2. Incorporate ICT in school curricula, with particular emphasis on building the capabilities of children between 6 and 15 years old	ST	Number of schools with ICT incorporated in their curricula
		1.1.3. Train teachers to handle a dynamic, student-centred learning environment either in traditional classrooms or in virtual classes and institute ICTs as a prerequisite skill for graduating teachers	ST	Number of countries instituting ICT as a prerequisite skill for graduating school teachers
	1.2. To have 80 per cent of secondary schools connected to the Internet and make this service available to students ^{a/}	1.2.1. Implement affordable Internet connections and services and secure safer access to the Internet	MT	Number of schools with access to the Internet for students

1. *Human resources development (continued)*

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
2. To produce quality ICT university graduates	2.1. To foster partnership between private sector and universities	2.1.1. Partnership with the private sector to encourage firms to benefit from student training and graduation projects	ST	Number of partnerships between private firms and universities, including cooperation with international firms
		2.1.2. Modify existing curricula to include ICT skills in all degrees and accelerate diffusion to all universities	ST	Number of universities with curricula modified to include ICT
	2.2. To disseminate e-learning	2.2.1. Provide online education through e-learning and virtual universities	MT	Number of virtual universities and universities with e-learning services
	2.3. To increase researches that have commercial applications	2.3.1. Develop ICT postgraduate curricula, such as master's degrees and doctorates	MT	Number of research papers with successful commercial values
		2.3.2. Create an enabling environment for ICT researchers	MT	Increase in ICT researchers
		2.3.3. Develop a dynamic system to respond to and cope with the changes taking place in the ICT sector	LT	Number of dynamic system in place to respond and cope with changes in ICT sector
3. To develop ICT vocational training and align programmes with market demand	3.1. To enhance the quality of vocational training, particularly in the field of ICT	3.1.1. Develop the ICT skills of vocational teachers	ST	Number of vocational training initiatives delivering ICT courses and certification
		3.1.2. Seek international certification	ST	
	3.2. To disseminate vocational training to rural areas and disadvantaged communities	3.2.1. Promote distance learning for delivery of vocational training in community centres	MT	Number of community centres providing distance learning for vocational training
	3.3. To provide affordable and skilled labour with credentials for serving markets demands	3.3.1. Partnership with private sector to introduce new ICT technical courses based on newly-introduced technologies	MT	Number of partnerships established between vocational training institutions and private sector
		3.3.2. Partnership with the private sector to build up the necessary skills to guarantee immediate employment and effective results for business firms	MT	

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

a/ *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

2. Research and development

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To revitalize research and development in the region and promote indigenous ICT innovations	1.1. To solicit government to support research and development	1.1.1. Secure sustainable financial support from Government to support research and development	ST	Number of countries allocating or increasing the percentage of their Government budgets to research and development
		1.1.2. Connect research and development institutions by a high-speed network ^{a/}	MT	
		1.1.3. Establishing centres of excellence ^{a/} for the software industry ^{b/} and in selected ICT fields	MT	Number of centres of excellence in the region or Number of countries flagged as centres of excellence for selected ICT fields
	1.2. To develop the software industry and promote the region as a centre of excellence in some ICT fields	1.2.2. Promote research and development to stimulate and boost creativity, thereby developing indigenous technology solutions rather than foreign-based ones ^{c/}	MT	Number of regional initiatives for developing indigenous technology
		1.2.3. Establish new institutional forms such as technology incubators	MT	Number of new institutional forms
	1.3. To build workforce capabilities and increase productivity of traditional local industries	1.3.1. Provide ICT tools for local traditional industry ^{d/}	MT	Number of traditional industries which have increased productivity and efficiency by using ICT

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

^{b/} Other potential areas for research and development include Arabic natural language processing with speech input/output command functionalities, Arabic optical character recognition (OCR) and Arabic full indexing technique.

^{c/} Suggested initiatives that could trigger a subsequent industry based on ICT include the production of animated films in Arabic.

^{d/} Traditional industries in the clothing and artisan sector could be enhanced by the introduction of ICT in the design and manufacturing processes.

3. ICT enterprises

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To increase the use of open-source software (OSS)	1.1. To encourage the use of open-source solutions in small and medium-sized enterprises (SMEs), educational and health institutions, and in the public sector	1.1.1. Identify and promote a network of experts in OSS	ST	Number of OSS expert networks in the region
		1.1.2. Conduct regional workshops	ST	Number of ICT firms developing and supporting solutions based on OSS
		1.1.3. Develop software applications using OSS technologies for commercial purposes by the private sector, specifically by SMEs	MT	Number of public and private institutions using applications based on OSS
2. To promote ICT services, especially system integration services in the region	2.1. To provide customized ICT turnkey solutions in order to increase competitiveness of firms in the region	2.1.1. Offer more incentives in order to retain highly skilled talents	ST	Number of established ICT firms providing services and system integration solutions in the region
		2.1.2. Simplify import, export, licensing and inspection procedures in order to increase the velocity of businesses	MT	Number of ICT firms with operations extending outside the region
3. To encourage software development industry	3.1. To develop the software industry and the norms for producing quality solutions and services	3.1.1. Remove or reduce taxes on software firms as well as increasing government expenditures on ICT	ST	Percentage contribution of software development industry to national gross domestic product (GDP)
		3.1.2. Strengthen quality assurance norms in software development and production	ST	Increase in number of ICT software firms that have obtained a quality assurance certification
		3.1.3. Establish forums at the international level to represent regional and local software firms	MT	Increase in export value of software and related services among Arab countries as well as to outside the region

3. ICT enterprises (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		3.1.4. Seek partnership with international firms and technology providers ^{a/}	MT	Number of partnerships with international firms and technology providers
		3.1.5. Encourage international firms to operate in the region	MT	Number of international firms with operation in the region
		3.1.6. Create and disseminate such innovative institutional forms as technology incubators and technology parks	MT	Percentage increase of labour force working in this industry and graduated from (or currently in) new institutional forms

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

AREA 5. BUILDING CONFIDENCE, TRUST AND SECURITY

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To build adequate security procedures	1.1. To increase confidence in conducting electronic business and commerce	1.1.1. Improve the overall security of online transactions by supporting industry-led security certifications and encryption ^{a/}	ST	Increase in electronic transactions expenditure
		1.2.1. Share best practices in the field of information security and encouraging their use by all concerned parties	MT	Number of countries that succeed in sharing good practices and handling incidents
	1.2. To adopt a mechanism for cooperating on security issues and incidents	1.2.2. Set up real-time incident handling and response and develop a cooperative network between focal points for sharing information and technologies on incident response	MT	Number of countries with operational real-time incident handling and response systems
2. To streamline judicial processes	2.1. To build the capabilities of judiciary staff	2.1.1. Provide extensive training for judiciary staff on legislative issues related to cyber laws	ST	Number of countries with judiciary staff trained to develop cyber laws

AREA 5 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		2.1.2. Foster consumer protection from marketplace fraud through licensing, inspection, investigation, enforcement and public education activities	ST	Number of countries with consumer protection
3. To develop cyber law enforcement systems	3.1. To build the capabilities of law enforcement	3.1.1. Providing extensive training for law enforcement on cyber crimes and relevant security issues	ST	Number of countries with law enforcement trained to fight cyber crime
4. To enable e-business and e-commerce services	4.2. To attract investment in ICT sector and promulgate the set up of e-business and e-commerce services	4.2.1. Streamlining judicial processes to become more efficient and effective in combating cyber crimes and protecting intellectual property rights as well as considering a regional dispute resolution system ^{b/}	MT	Number of countries with applicable laws for mitigating cyber crimes and relevant security issues
		4.2.2. Drafting, adopting, and implementing laws in order to conduct online transactions legally, such as e-signature law ^{b/}	MT	Increase in online transactions laws
5. To promote intellectual property rights	5.1. To encourage creation of new intellectual property	5.1.1. Imposing intellectual property rights laws on content and on ICT solutions, including issues related to copyright laws, trademarks, trade names and domain name registrations	ST	Number of countries adopting and enforcing intellectual property rights
	5.2. To facilitate intellectual property rights procedures on regional level	5.2.1. Establishing a regional body consolidating all intellectual property rights processes in all member countries	MT	Number of countries represented in the regional body

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} For example establishing a regional firm similar to Verisign®.

^{b/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

AREA 6. ENABLING ENVIRONMENT

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To develop a conducive environment for building the information society	1.1. To disseminate access to ICT and information	1.1.1. Devise laws for providing high-speed Internet access	ST	Number of countries with initiatives for increasing access to ICT

AREA 6 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		1.1.2. Enforce laws to fight harmful content and mitigate Internet fraud	ST	Number of countries with initiatives for fighting harmful content on the Internet
		1.1.3. Provide low cost access to the Internet, ^{a/} particularly at public access points, educational institutions and community centres	ST	Number of countries with affordable access to use the Internet
		1.1.4. Connect areas outside the current telecommunications backbone	ST	Number of initiatives increasing participation of women and marginalized segments of the population in building the information society
		1.1.5. Emphasize public ICT services that support social inclusiveness of all people in the information society	MT	
2. To promote the liberalization of the telecommunications sector	2.1. To encourage foreign direct investment (FDI) and private sector development in the telecommunication sector	2.1.1. Support liberalization of the telecommunications sector	MT	Number of countries with liberalized telecommunication sector
		2.1.2. Streamline and simplify telecommunications licensing procedures	MT	
3. To revise fiscal law in order to promote and build the ICT sector	3.1. To encourage and increase investment in the ICT sector	3.1.1. Introduce tax and custom reforms to support the ICT sector	ST	Increase in investment and market capitalization of ICT sector
		3.1.2. Attract FDI through various incentive schemes, including tax concessions over a period of 10 years for newly-established ICT firms	MT	

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

AREA 7. ICT APPLICATIONS

This section acknowledges the importance of developing ICT thematic applications for building the information society in the fields of public administration, business, education, health, and employment. Other applications, such as e-agriculture or e-tourism, could be added to these fields. Organizations in the region need to move from simply maintaining a presence on the Web to full-fledged transformations in terms

of structure and processes. Such transformations, in particular those in the areas of e-government, e-business, e-learning and e-health, are best achieved through the following four-phase model:

(a) Presence phase, which consists of a web site containing static information (to be completed by 2005);

(b) Interaction phase, which involves the exchange of information and electronic forms that can be completed electronically or printed and then transmitted by mail (to be completed by 2007);

(c) Transaction phase, where functions are automated and there are more streamlining capabilities (to be completed by 2010);

(d) Transformation phase, in which the current structure is transformed, including relevant laws and procedures, paving the way for a new virtual organization (to be completed by 2015).

While some applications would need to progress sequentially through these four phases, others could leapfrog into the interaction and transaction phases.

1. E-government applications

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To formulate and adopt e-government strategies	1.1. To increase capacity of Government in developing and implementing effective and sustainable e-government strategies	1.1.1. Conduct regional seminars and workshops to assist countries in formulating and revising e-government strategies	ST	Number of countries with e-government strategies
		1.1.2. Encourage all countries to adopt e-government strategies while taking into account different national circumstances	ST	
2. To enhance the delivery of services and information to businesses and citizens	2.1. To increase number of e-government services as well as their transparency and accountability	2.1.1. Automate requests and updates of personal documents ^{a/}	ST	Number of e-government services provided online
		2.1.2. Automate business registrations and streamline interactions with Government such as tax processes, customs declarations, building permits and renewal of licences ^{a/}	MT	
3. To improve the efficiency of governmental processes	3.1. To pave the way for the development of electronic records and digital data	3.1.1. Develop a framework for securely storing and archiving documents and other electronic records of information	ST	Number of governments that have started to digitize and store their records
		3.1.2. Promote the development and use of open, interoperable, non-discriminatory and market-driven standards	ST	

1. E-government applications (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
	3.2. To enhance the exchange of data and information among Government departments with a country	3.2.1. Link governmental networks	MT	Number of national governments with functioning networks
	3.3. To optimize government processes and resources	3.3.1. Implement enterprise resource planning applications, including financial, human resource management, property management and workflow systems	MT	Number of ministries with automated core processes
		3.3.2. Develop knowledge-based systems	LT	Number of implemented knowledge-based systems

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

a/ *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

2. E-business and e-commerce applications

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To promote e-business and improve the efficiency of traditional, local and regional industries, in particular SMEs	1.1. To increase velocity of business and enhance the competitiveness of firms and traditional industries	1.1.1. Investigate the use of ICTs with the aim of improving the efficiency of traditional, local and regional industries	ST	Number of ICT solutions aimed at enhancing traditional, local and regional industries
		1.1.2. Automate basic processes by implementing software applications in the respective fields of accounting, human resource management, inventory control, manufacturing and customer relationship management	MT	Number of businesses automating their back and front office operations
2. To promote e-commerce and entrepreneurial activities in rural areas	2.1. To succeed in linking suppliers to consumers and sustaining the flow of information and goods along the supply chain	2.1.1. Establish community centres that provide access to e-commerce services	ST	Number of successful e-commerce applications, in particular those serving SMEs

2. E-business and e-commerce applications (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		2.1.2. Locate potential customers and markets and link them to rural areas by developing e-commerce applications in partnership with the private sector and local and regional organizations	ST	Same as previous
		2.1.3. Establish multilateral/bilateral agreements to advance e-commerce and streamline e-transactions ^{a/}	ST	Number of established multilateral/bilateral agreements to advance e-commerce and streamline e-transactions

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

3. E-learning applications

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To encourage and advance e-learning in the region	1.1. To promote regional cooperation for developing domestic e-learning policies, with a view to reduce illiteracy rate	1.1.1. Conduct thorough analyses of existing education policies in order to support and regulate online learning	ST	Number of countries adopting e-learning policies
		1.1.2. Ensure that a renewed and concerted effort is made to tackle and substantially reduce illiteracy using all available methods, including media ^{a/}	MT	Number of countries with reduced illiteracy rate
	1.2. To disseminate e-learning applications and services in the region	1.2.1. Develop affordable and user-friendly ICT-based solutions that target students, teachers and parents	ST	Number of online learning systems as well as affordable ICT-based learning solutions
		1.2.2. Develop e-libraries and community centres to promote lifelong learning, distance learning and ICT-based learning	ST	Number of e-libraries and community centres with e-learning services
		1.2.3. Capitalize on the high penetration rate of television programmes in the region to develop and disseminate distance learning	ST	Number of television distance learning programmes

3. E-learning applications (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		1.2.4. Launch virtual universities, thereby reducing both the cost of learning and the time spent away from a job while learning	MT	Number of virtual universities
2. To improve the quality and value of e-learning	2.1. To regulate e-learning standards and set up quality norms	2.1.1. Promoting standards related to e-learning structures, security and ethical issues	ST	Number of countries with e-learning standards
		2.1.3. Implement quality certification for online educational services	ST	Number of online educational services with quality certification
		2.1.3. Develop school networks at a local and regional level	MT	Number of school networks
3. To develop an e-learning industry	3.1. To pave the way for the development of an e-learning industry	3.1.1. Promote research and development with the aim of triggering innovative modalities and teaching methods with a greater impact on learning and society	MT	Number of centres/firms with research and development activities in e-learning
		3.1.2. Build regional learning repositories that provide the main building blocks of e-learning content development	MT	Number of regional learning repositories
		3.1.3. Invest in e-learning commercial solutions and developing an e-learning industry	MT	Number of local and regional e-learning commercial solutions

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

a/ *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

4. E-health applications

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To develop national e-health strategies	1.1. To solicit national governments to develop and adopt e-health strategies	1.1.1. Formulate and adopt e-health policies and strategies	ST	Number of countries with e-health strategy
		1.1.2. Initiate a legal framework for e-health applications	MT	
	1.2. To implement and adapt international standard to the region	1.2.1. Develop e-health standards for the region	MT	Regional standards for e-health

4. E-health applications (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement	
2. To deliver health services to isolated segments of the population and to rural areas	2.1. To use ICT-based initiatives for providing medical and humanitarian assistance to isolated segments of the population and to rural areas	2.1.1. Establish community telemedicine centres and e-health caravans with online access to doctors and hospitals to deliver basic health services, particularly to women and youth in remote and rural areas	ST	Number of community telemedicine centres, e-health caravans, and web-enabled systems for basic health	
		2.1.2. Develop web-enabled systems that provide preventive services and diagnosis for basic health issues ^{a/}	ST		
	2.2. To increase awareness on common diseases and revitalize the role of women as a health providers in their families and communities ^{a/}	2.2.1. Facilitate access to medical knowledge and locally relevant content resources to strengthen public prevention programmes on women's health and diseases common in the region such as HIV/AIDS ^{a/} and Bilharzia		ST	Number of public prevention ICT-based applications on women's health and diseases common in the region
3. To improve the effectiveness and efficiency of the health system in both the private and public sectors	3.1. To enhance health preventive measures as well as the exchange of healthcare information	3.1.1. Establish a health information network among healthcare institutions	MT	Number of healthcare institutions connected to a national/regional health information network	
		3.1.2. Alert, monitor and control the spread of contagious diseases through improving the common information system ^{b/}	MT		
	3.2. To improve health services and increase their quality		3.2.1. Implement enterprise resource planning for health institutions	MT	Number of healthcare institutions with automated back and front office operations
			3.2.2. Apply a set of quality criteria for e-health services	MT	
			3.2.3. Implement electronic medical records (EMR)	MT	Number of countries adopting EMR and knowledge-based healthcare systems
			3.2.4. Develop knowledge-based healthcare systems	LT	

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} *Towards an Arab information society: a framework for collaborative action*, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

^{b/} See the Global Plan of Action (WSIS-03/GENEVA/DOC/5-E).

5. E-employment

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To provide an enabling environment for e-employment	1.1. To develop guidelines, best practices and promote new business models for e-employment	1.1.1. Develop guidelines, best practices and new labour laws built on principles of social justice and gender equality for e-workers and e-employers ^{a/}	MT	Number of countries supporting e-employment in the region
		1.1.2. Promote new ways of organizing work and business with the aim of raising productivity, growth and well-being through investment in ICTs and human resources ^{a/}	LT	Number of firms and organizations with policies for supporting e-employment
	1.2. To provide new employment opportunities and reduce brain drain	1.2.1. Promote e-employment to allow the most skilled workers to work in their societies and increase employment opportunities for women ^{a/}	LT	Number of successful e-employment initiatives

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} See the Global Plan of Action (WSIS-03/GENEVA/DOC/5-E).

AREA 8. CULTURAL AND LINGUISTIC CONTENT

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To preserve the rich and varied cultural heritage of the region	1.1. To increase digital Arab content (DAC), especially that related to cultural heritage of the region	1.1.1. Develop guidelines and methodologies for preserving, promoting and archiving DAC ^{a/} in public and private institutions in particular those dedicated to cultural and linguistic studies	ST	Percentage increase of DAC
		1.1.2. Publish online Arabic references	ST	
		1.1.3. Promote the construction of portals and web sites in the areas of history and cultural heritage, including modern intellectual contributions from the region	ST	Number of web sites dedicated to Arab history and cultural heritage

AREA 8 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
2. To create favourable conditions for the production, processing, dissemination and protection of DAC	2.1. To increase regional support for DAC initiatives	2.1.1. Raise awareness of the need for and benefits of local DAC to promote socio-economic developments	ST	Number of seminars/workshops on DAC
		2.1.2. Establish a regional Arabic Content Group and set up supporting subcommittees and web sites	ST	Number of studies and papers published by a regional Arabic Content Group
3. To build a sustainable digital Arabic content industry that produces content and applications suited to local needs	3.1. To implement the infrastructure needed for the DAC industry	3.1.1. Implement and maintain Arabic domain name on the Internet to provide ubiquitous access to online localized content	ST	A functioning Arabic Domain Name System (ADNS) acknowledged by the Internet Corporation for Assigned Names and Numbers (ICANN)
		3.1.2. Identify potential trusted regional sources for the production of DAC and applications and provide them with guidance and support	ST	Number of regional sources for production of DAC in the region
	3.2. To augment research and development in DAC	3.2.1. Establish a network of research centre / institutions to adopt and set Arabic digital linguistic standards and technical specifications ^{a/}	MT	Well-defined Arabic digital linguistic standards
		3.2.2. Promote research and development in automatic Arab language processing and collaboration	MT	Number of new applications for Arabic language processing and collaboration

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} Towards an Arab information society: a framework for collaborative action, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

AREA 9. MEDIA

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To provide an adequate environment for integrating the media with the information society	1.1. To pave the way for the media to play an active role in the sustainable development of the information society	1.1.1. Build capabilities for using innovative media systems, such as e-radio, e-television and e-press	ST	Number of media institutions using innovative systems

AREA 9 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		1.1.2. Promote joint use of traditional means and ICT in moving towards digital content delivery	ST	Number of media institutions migrating towards digital content
		1.1.3. Preserve the audiovisual heritage of the region ^{a/} in digital format	ST	
		1.1.4. Devise appropriate laws to enable the use of innovative systems for media production and delivery	MT	Number of countries with laws that support the use of innovative systems to produce and deliver media
2. To harness the media to support and promote the development of the information society	2.1. To ensure dissemination of ICT information to reach wide audiences and to contribute to plurality of information	2.1.1. Use traditional media to create awareness of ICT and its role in socio-economic development	ST	Number of media institutions with programmes on creating ICT awareness and maintaining the plurality and free flow of information
		2.1.2. Take appropriate measures to encourage and maintain the plurality and free flow of information while increasing citizen participation	ST	
		2.1.3. Ensure that the people of the region have access to traditional and new forms of media	MT	Number of countries with increased penetration rate for traditional and new forms of media

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} Towards an Arab information society: a framework for collaborative action, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

AREA 10. INTERNATIONAL AND REGIONAL COOPERATION

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
1. To establish a multi-stakeholder dialogue with international and region organizations at regional and local levels	1.1. To involve the community at large in the process of building the information society in collaboration with international and regional organizations	1.1.1. Develop a framework and mechanism to encourage dialogue among multi-stakeholders in the promotion of ICTs at regional and local levels	MT	Number of programmes and projects resulting from the multi-stakeholder dialogue

AREA 10 (continued)

Objectives	Expected accomplishments	Strategic actions	Time frame	Indicators of achievement
		1.1.2. Conduct an annual regional meeting on building the information society involving all stakeholders, in particular international and regional organizations	MT	Same as previous
2. To promote private and public partnership (PPP) or multi-sector partnership (MSP)	2.1. To foster PPP and MSP in the region	2.1.1. Establish functioning showcase PPPs or MSPs	ST	Number of functioning PPPs or MSPs
		2.1.2. Promote the development of new institutional forms such as incubator schemes, national and regional venture capital investments and government investment funds, including microfinance for SMEs	MT	Number of new institutional forms grouped by country
3. To set up an Arab fund for ICT development and integration	3.1. To provide funding for regional initiatives	3.1.1. Establish an Arab fund for ICT the development and integration ^{a/} under the supervision of a consortium of multilateral organizations	ST	Amount of money allotted to the Arab fund

Notes: Short term (ST) until end 2007; medium term (MT) until end 2010; long term (LT) until end 2015.

^{a/} Towards an Arab information society: a framework for collaborative action, Pan-Arab Regional Conference on WSIS, held in Cairo, 16-18 June 2003.

III. PROGRAMMES

A. INTRODUCTION

In an attempt to build a regional information society, this part of the proposed RPoA elaborates the main functionalities of a number of programmes aimed at triggering partnerships and inducing interactive participation from a broad stakeholder base. Most of these programmes are not derived from new concepts and some, such as empowerment through community access, are already implemented in certain countries. The proposed programmes are recommended because they meet regional requirements and offer potential for harnessing information and communication technology (ICT) for socio-economic development.

The programmes are envisaged as a means of identifying and developing a number of regional projects, which, in turn, can instigate fruitful partnerships and secure the necessary resources, which could be in-kind contributions, human or financing resources, to proceed with implementation. This process will create a structured framework and produce the desired impetus to migrate towards the information and knowledge society in the region.

Intrinsic to the RPoA is the notion of maintaining a flexible and modular structure that allows it to continuously evolve in order to meet the needs of the region and cater for new opportunities that arise on the ever-changing ICT landscape. To this end, the structure of the present chapter is open-ended in order to allow future additions. Moreover, each section in this chapter is dedicated to the presentation of one programme in a concise and comprehensive format with a view to promoting dialogue, reaching common ground and enhancing regional synergies.

In view of the above, each programme will start with a conceptual overview of its major components in order to clarify the rationale for promoting a given programme. Each programme is then mapped to the areas presented in the strategic framework of the RPoA, in order to facilitate the forging of qualitative relationships between strategic framework components and their counterparts within programmes in a manner that identifies parent(s) for each programme rather than establishing exclusive relationships. The core programme description is summarized in an outline that includes the programme's main objective, challenges, implementation strategy, expected accomplishments and indicators of achievement.

B. PROGRAMME DETAILS

The list of programmes presented below is not exhaustive. Future programmes could be added should they satisfy the following criteria:

1. Programmes must be presented in a clear and concise format, such as that used in this RPoA, based on the results-based management paradigm. This criterion makes possible the adoption of a template that enables organizations to behave in a proactive rather than a reactive manner, while stressing the results to be attained and using indicators to track progress.
2. Programmes must have a coordinating agency that advocates the objective and expected accomplishments of the programme among stakeholders, supervises the efforts for obtaining projects that best serve this programme and coordinates among the various project champions. The coordinating agency must be an impartial broker to the development process. A typical agency could be in the form of non-governmental, international or regional organization. It is anticipated that the efforts of these agencies would be coordinated by a secretariat that provides technical assistance aimed at maintaining the quality of work.
3. Programmes must also have high impact on a number of areas identified in the strategic framework of the RPoA. In other words, the programme must fulfil some of the objectives and expected accomplishment for these areas. The programme may well serve other areas by producing a number of actions that generate positive spill-over aimed at partially solving relevant issues.

Details of current programmes that have satisfied the above criteria are provided in the following pages. The order of their presentation does not reflect priorities, which may be indicated at the project level. The current programmes are:

- (a) ICT for economic development;
- (b) Developing e-government services;
- (c) Empowering Arab NGOs in the information society;
- (d) Developing telecommunications infrastructure;
- (e) Developing the ICT sector;
- (f) Women empowerment in the information society;
- (g) Information society measurements;
- (h) Promoting DAC;
- (i) ICT in education and scientific research;
- (j) Increasing community access with emphasises on the marginalized and disabled.

Programme 1. ICT for economic development

The role played by ICTs in supporting economic development is vital. In addition to supporting productivity and innovation across sectors, ICTs are also critical enablers of trade development itself as they help correct, improve and make more relevant the very processes with which trade is conducted.⁷

Such technologies are a tool that extends beyond basic infrastructure elements and builds an additional layer on top of the physical infrastructure that provides end-to-end transactional services aimed at supporting economic development through simplifying, hosting and integrating activities at multi-sectoral levels, thus, electronically smoothing and coordinating global supply chains between a wide range of services and products on the one hand and a broad market on the other hand.

(a) *Mapping programme 1 to the strategic framework*

In the context of the above conceptual overview, this programme best serves three areas, mainly by developing policies, strategies and an enabling environment (areas 1 and 6) for supporting economic growth through the use of ICT and by fostering international and regional cooperation (area 10) for smoothing and coordinating ICT turnkey solutions. The infrastructures and applications of ICT are also seriously affected by this programme as well as building confidence, trust and security to conduct electronic transaction over the Internet (see table 1).

At the low impact level, areas 3, 4, 8 and 9 could witness a number of achievements leading to independent operational successes not necessarily belonging to an overall strategy dedicated to fully accomplish the goals associated with them.

TABLE 1. MAPPING PROGRAMME 1 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies	X		
Area 2. ICT infrastructure		X	
Area 3. Access to information and knowledge			X

⁷ See *The Dube Tradeport Cyberport: ICT and logistics integration for economic development*, (E/ESCWA/ICTD/2004/WG.1/5).

TABLE 1 (continued)

Strategic framework areas	Impact level		
	High	Medium	Low
Area 4. Capacity-building			X
Area 5. Building confidence, trust and security		X	
Area 6. Enabling environment	X		
Area 7. ICT applications		X	
Area 8. Cultural, linguistic and local content			X
Area 9. Media			X
Area 10. International and regional cooperation	X		

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To harness ICT in order to enable economic growth and encourage trade within the region and between the region and other regions of the world.

Challenges: Huge trade deficits continue to pose major challenges to economic development in the region. Intra-regional trade between ESCWA member countries and extra-regional trade with outside markets remain among the lowest in the world. Moreover, total bilateral trade for ESCWA member countries declined steadily in the period between 1980 and 1990.⁸

A number of ESCWA member countries expressed their interest in creating national trade and transport facilitation committees in order to put in place a framework for consultation and cooperation between the public and private sector for the advancement of a trade facilitation agenda. The Greater Arab Free Trade Area (GAFTA) constitutes the most recent and, to date, most significant step taken by the Arab countries to achieve a significant level of economic integration. Other regional initiatives are the Integrated Transport System in the Arab Mashreq (ITSAM) and the trade platform Tejari.com, which is in the process of franchizing its operations in the region.

With the above in mind, the programme recognizes ICT as an enabler for facilitating all processes across the value chain of trade transactions and creating efficiency benefits.

Strategy: Recognizing that trade is a significant component of economic development, this programme takes a gradual implementation approach to the establishment of a trade and transport logistics ICT-enabled regional facility, with a view to supporting and advancing GAFTA and ITSAM agreements and creating regional trade integration. Similarly, this programme provides a gateway for connecting the region to global markets and, at the same time, allows global markets to tap into the wealth of the region.

Surveys, studies, regional meetings, knowledge networking and advisory services contribute to the implementation of this programme and identification of a number of projects for the region. Pilot projects will be launched in close collaboration with stakeholders and by capitalizing on public and private partnerships.

⁸ Ibid.

Expected accomplishments	Indicators of achievement
(1) Development of a conducive environment for interregional trade of ESCWA member countries.	(1.a) Increased number of countries with free trade policies such as non-tariff barriers and abolition of quota restriction on imports; (1.b) Reduced complexity of border formality procedures and development of logistics infrastructure; (1.c) Increased awareness of international standards and purchasing requirements as well as technology transfers and competence building.
(2) Increased exports of national and regional producers to regional and international markets.	(2.a) Increased awareness of Arab products, services and capabilities as well as direct connectivity with international markets; (2.b) Increased number of sustainable cyber hub projects in the region; (2.c) Reduced trade deficit.

Programme 2. Developing e-government services

E-government strives for better delivery of Government services to citizens, for improved interaction with business and industry, for citizen empowerment through access to information, and for more efficient Government management. As a result, e-government direct impact on the economy and society can be increased transparency, less corruption, greater convenience, revenue growth, and/or cost reductions.

This programme is dedicated to developing e-government services with an emphasis on supporting Government decision makers in taking appropriate actions to contribute to socio-economic development of their countries. As such, e-government is a tool that enhances the economic competitiveness of businesses and empowers citizens.

(a) Mapping programme 2 to the strategic framework

This programme aims at building the capabilities of the public sector, formulating policies and strategies, and developing ICT applications to support decision making process as well as increase transparency of government services. As such, this programme intersects, on a high impact level, with three areas namely policies and strategies (area 1), capacity-building (area 4) and ICT applications (area 7). This programme also increases access to information, provides an enabling environment and builds confidence and trust for using e-government applications, thus serving areas 3, 5 and 6 with a medium level impact. The remaining areas have indirect advantages from this programme (refer to table 2).

TABLE 2. MAPPING PROGRAMME 2 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies	X		
Area 2. ICT infrastructure			X
Area 3. Access to information and knowledge		X	
Area 4. Capacity-building	X		
Area 5. Building confidence, trust and security		X	
Area 6. Enabling environment		X	

TABLE 2 (continued)

Strategic framework areas	Impact level		
	High	Medium	Low
Area 7. ICT applications	X		
Area 8. Cultural, linguistic and local content			X
Area 9. Media			X
Area 10. International and regional cooperation			X

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To improve government efficiency, effectiveness, transparency and accountability through the use of e-government tools in projects focusing on improving delivery of services to citizens and businesses, in particular in socio-economic fields.

Challenges: Without substantial efforts from public and private sectors, there is a risk that this programme will only deliver products and services but not contribute to delivering efficiency savings while improving the delivery of e-government services around the needs of citizens and businesses. For the most part, challenges that could impede the progress of this programme are manifested in the form of complexities due to political, cultural, organizational, and personal factors. Other impediments could be related to legal structure and lack of awareness of the benefits and opportunities offered by e-government services.

Strategy: The strategy aims at formulating a set of policies for harnessing ICT for improving government services, in order to make it easier for people to obtain what they seek from government and enhance capabilities to support government decisions in socio-economic fields. The programme will benefit from existing endeavours as well as experiences acquired in the region with regard to improving government efficiency, effectiveness, transparency and accountability.

In all phases of the programme, the participation of government representatives ensures a pragmatic approach to meet the objective of this programme and participate in the planning and development process of relevant projects. In addition, citizens and the business sector have particular interests and needs. Setting up appropriate applications would underpin this programme.

Cooperation and collaboration with private sector, international and regional organizations, business associations and civil society would contribute to the implementation of this programme.

Expected accomplishments	Indicators of achievement
(1) Increased number of e-government services as well as their transparency and accountability.	(1.a) Increased number of government services provided online.
(2) Enhanced government processes and optimized resources allocation.	(2.a) Increased number of ministries with automated core processes; (2.b) Increase number of government organizations that are interconnected to exchange information with a view to optimising resources allocation; (2.c) Increased number of government-implemented decision support systems in socio-economic fields.

Programme 3. Empowering Arab NGOs in the information society

As modern civil society evolves globally towards the information society, it is essential that Arab NGOs establish effective operations in the parallel virtual-world to support, or supplement, its real-world operation. Virtually operating Arab NGOs must dynamically link their basic goals with the means needed to achieve them. As a key stakeholder with a prominent role to play in the information society, the commitment and involvement of civil society is important in the creation of an equitable information society and the implementation of ICT-related initiatives for development.⁹

Building a virtual community in the form an information network, or a computer-supported social network, on the Web is the way to empower Arab NGOs to fulfil their mission. The virtual community of Arab NGOs allows the actual net of Arab NGOs to develop the cooperation, outsourcing, and experience history it mostly lacks. In the framework of virtual community, NGOs function as un-calibrated sensory neurons within their beneficiary groups, and indeed communities, as they sense, measure, and respond to stimuli provided by the communities they serve. The virtual community may then be thought of as a neural network. Like a neural network, the strength of this community is not dependent on the strength of its individual members, but rather on the strength of their mutual interaction.

(a) Mapping programme 3 to the strategic framework

Empowering Arab NGOs mostly involves regional cooperation ICT infrastructure, capacity-building, and setting up an enabling environment; consequently, this programme best serves areas 2, 4, 6 and 10 as illustrated in the table 3. It also tackles on a medium the area on ICT applications. The remaining areas are served with a lower level of impact.

TABLE 3. MAPPING PROGRAMME 3 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies			X
Area 2. ICT infrastructure	X		
Area 3. Access to information and knowledge			X
Area 4. Capacity-building	X		
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment	X		
Area 7. ICT applications		X	
Area 8. Cultural, linguistic and local content			X
Area 9. Media			X
Area 10. International and regional cooperation	X		

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) Outline

Objective: To harness the potential of ICT to promote the development goals of the Millennium Declaration by empowering Arab NGOs to effectively operate within the realm of the information society.

Challenges: Volunteer work forms part of Arab tradition. However, in the Arab society and political systems of today, Arab NGOs face the formidable task of re-establishing their presence as a cornerstone for development. NGOs operate within political systems that have long viewed activism and advocacy as threatening and destabilizing, treated NGOs as pariahs, rather than partners and therefore sought to limit

⁹ See the Global Plan of Action (WSIS-03/GENEVA/DOC/5-E).

and/or control their operation and connection with people at home and similar organizations abroad. Moreover, as the result of many years of neglect, the attempts of NGOs to restart are hampered by their legal status, inadequate organizational structure and lack of material and human resources. However, perhaps the most serious challenge facing Arab NGOs is their inability to call on one another to provide assistance, resources and support where and when these are most needed.

Strategy: This programme relies on reconnecting NGOs in a loose virtual organization to achieve its objective. In this respect, it is essential that Arab NGOs are made aware of the necessity to build a virtual organization that transcends towns, states, and countries, to take advantage of the opportunities provided by information networks, and learn to avoid the risks of communicating and connecting over geographical and social barriers.

As such, this programme entails many of the characteristics associated with capacity-building, empowerment and other programmes. The strength of the virtual community of NGOs does not depend on the strength of its individual members but on the strength of their mutual interaction. Hence, throughout the life cycle of this programme, increased connectivity and interaction among Arab NGOs and, also, NGOs and their communities are the main factor for measuring success and instigating partnerships.

Expected accomplishments	Indicators of achievement
(1) Increased connectivity and interaction-cooperation among Arab NGOs.	(1.a) Increased number of countries involved; (1.b) Increased number of NGOs connected; (1.c) Increased degree of interaction-cooperation among NGOs in the region and between NGOs and local communities.
(2) Improved performance of NGOs.	(2.a) Increased number and scope of ICT services, such as e-health, e-government, and e-learning, provided by NGOs; (2.b) Increased participation of communities in surveys and improved dissemination of outcomes locally and regionally.
(3) Improved socio-economic development.	(3.a) Millennium Declaration indicators.

Programme 4. Developing telecommunications infrastructure

The development and integration of telecommunications infrastructure in the region enables migration towards the information society by providing affordable and equitable access to ICT services. The major benefits of this programme include reduction of the digital divide by reaching a wider proportion of the population, improving employment by creating new jobs and increasing the competitiveness of various economic sectors by increasing access to new markets and fostering collaboration.

Telecommunication infrastructure entails a large range of components and services, including fixed lines, mobile telephony, satellite communications, Internet services and issues related to the liberalization and deregulation of the telecommunication sector. With the evolution of Internet access technologies and hosting capabilities in the region, the opportunity to develop an integrated digital regional backbone is becoming more lucrative, in particular as regional Internet traffic is increasing. A viable agenda for reform of the telecommunication sectors is vital for the development and integration of telecommunications in the region.

(a) Mapping programme 4 to the strategic framework

This programme mainly fulfils the goals of the telecommunications infrastructure area as well as those of international and regional cooperation. It deals with structural problems, telecommunication sector deregulation and liberalization issues, teledensity and Internet dissemination, as well as creating a mechanism for tackling obstacles to the development of a regional integrated backbone. This programme

also has a medium impact level on several other areas, which could hinder the implementation process if not properly served (see table 4). Low impact level areas are also affected by this programme but to a considerably lesser degree than the others.

TABLE 4. MAPPING PROGRAMME 4 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies		X	
Area 2. ICT infrastructure	X		
Area 3. Access to information and knowledge		X	
Area 4. Capacity-building			X
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment		X	
Area 7. ICT applications			X
Area 8. Cultural, linguistic and local content			X
Area 9. Media			X
Area 10. International and regional cooperation	X		

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To develop an integrated multi-service regional telecommunications infrastructure in a cost-effective manner and pass on the cost advantage to consumers, thus increasing penetration rates of ICT services.

Challenges: Although ESCWA member countries are striving to upgrade their ICT infrastructure, their status continues to lag behind world averages. The targets of achieving similar ICT penetration levels entail significant investments and bold decisions involving smart partnerships and innovative financing schemes. Numerous challenges exist, including the lack of adequate finance to bridge the digital divide, the dearth of sizable regional projects that can attract capital and create employment and the absence of a clear reform agenda, coupled with the redundancy of major ICT assets that are under-utilized in the region. The major challenge lies in the lack of long-term competitive advantages for incumbent operators to confront open markets.

Strategy: Two major directions underpin the strategy of this programme. The first focuses on increasing reform and liberalization of the telecommunication sector while the second aims to enhance integration between countries of the region in order to achieve economies of scale and better utilize resources and experiences that can be shared.

Cooperation with the Council of Arab Ministers of Arab Telecommunications and Information is key to the proposal of a strategic plan and viable agenda for implementation of this programme. Expertise from countries considered as reforming pioneers as well as from the private sector will be utilized in order to benefit from the opportunities leading to sustainable business operations and keep abreast of ICT innovations.

A top-down approach to reach an intergovernmental agreement and solicit the interest and commitment of major stakeholders will be based on the early involvement of major stakeholders and the formulation of attractive and realistic plans. Moreover, a bottom-up approach will be used in order to leverage the success of prevailing reform and modernization endeavours as well as current bilateral and multilateral agreements adopted for the purpose of implementing an integrated regional infrastructure. The latter approach will support existing networks with the aim of integrating them in this programme and

develop other sub-regional networks that constitute the building blocks of the telecommunication infrastructure in the region.

Expected accomplishments	Indicators of achievement
(1) Committed partnership for integrating telecommunication infrastructure in the region.	(1.a) Intergovernmental agreements on the adoption of the programme; (1.b) Increased number of partners subscribing to the programme; (1.c) Increased number of regional ICT infrastructure projects, such as the development of a digital regional backbone.
(2) Increased access to the Internet and voice communications.	(2.a) Increased penetration rates of ICT services, such as increased Internet penetration and teledensity rates; (2.b) Decreased tariffs for regional voice and data communications.

Programme 5. Developing the ICT sector

In developed and developing countries, the move towards the information society has been accompanied by the creation of an ICT sector. The use of technologies without having a share in their generation and production could have a negative impact on cumulative economic growth, as is the case with the Arab world where the impact was minus 10 per cent during the period 1960-1992, compared with 70 per cent for Germany during the same period.¹⁰ This situation could obstruct the move of Arab States towards the information society.

Programme 5 aims to develop the ICT sector in the region. The sector includes software (systems and applications), services (product services, professional and outsourcing services) and hardware (computer systems, networking, handsets and semi-conductors).

The programme will achieve its objectives by implementing a number of regional projects such as facilitating partnerships among stakeholders in the ICT sector through the establishment of regional networks and clusters, encouraging the establishment of ICT incubators in member countries and producing guidelines on recommended directives for member countries with a view to creating a favourable legislative environment for the development of the ICT sector.

(a) Mapping programme 5 to the strategic framework

The ICT sector when viewed with its upstream industry, electronics, is the largest economic sector worldwide. Programme 5 complements the other programmes in that it serves the strategic framework for building the information society by having a high impact level on a number of areas, namely 3, 4, 6 and 7 (see table 5). Spill-over effects to other areas create a medium level of impact on ICT infrastructure, local content and international and regional cooperation. The impact on areas 1, 5 and 9 is low.

TABLE 5. MAPPING PROGRAMME 5 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies			X
Area 2. ICT infrastructure		X	
Area 3. Access to information and knowledge	X		

¹⁰ World Bank Institute, *Economic growth in East Asia: contribution of technical progress to economic growth*.

TABLE 5 (continued)

Strategic framework areas	Impact level		
	High	Medium	Low
Area 4. Capacity-building	X		
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment	X		
Area 7. ICT applications	X		
Area 8. Cultural, linguistic and local content		X	
Area 9. Media			X
Area 10. International and regional cooperation		X	

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To create regional cooperation between ICT sector stakeholders, establish a mechanism for the creation of innovative companies in this sector and promote a favourable environment for the growth of this sector in view of its importance for the information society.

Challenges: The economy of the region suffers from the weakness of the ICT sector: almost no ICT products are produced in the region. The ICT sector has an impact on the productivity and competitiveness of all other sectors of the economy and on economic growth, job creation and economic diversity, all of which pose serious challenges to Arab economies. The ICT sector, in particular the software sector, is not recognized as an industry in the region and the entire sector is not yet classified according to United Nations International Standard Industrial Classification (ISIC). Industry and trade directories in the Arab states do not yet promote ICT as a sector. Legislation or regulation that would create a favourable environment for the growth of the ICT sector does not exist in the majority of Arab countries.

Strategy: Analytical studies, expert group meetings, capacity-building and advisory services are important to develop the ICT sector in the region. The cornerstone for the advancement of this programme is special emphasis on the implementation of public and private partnerships.

In order to address the challenges mentioned above, the strategy needs to tackle a number of fronts. The first involves fostering regional collaboration and partnerships. The second is based on increasing the development of new institutional forms and the formation of regional clusters. The third consists of enhancing the current legislative environment for promotion of the ICT sector.

Expected accomplishments	Indicators of achievement
(1) Improved access among ICT sector stakeholders with a view to promoting collaboration and partnership at the regional level.	(1.a) Number of regional web-enabled databases containing essential information on ICT sector stakeholders; (1.b) Number of entries in each web-enabled database.
(2) Increased dissemination of incubators in the region and the formation of regional clusters.	(2.a) Number of incubator schemes created in the region as a result of the programme; (2.b) Number of ICT companies created from each incubator; (2.c) Number of established regional clusters.

Expected accomplishments	Indicators of achievement
(3) Published guide on directives for enabling the development of the ICT sector into an industry (legislation, organization, management).	(3.a) Number of member countries devising and adopting laws, rules and regulations for fostering the development of the ICT industry as a result of the programme.
(4) Promoting local product development in the ICT sector.	(4.a) Number of participating stakeholders; (4.b) Number of new products developed as a result of the project; (4.c) Number of newly-established ICT firms as well as increase in ICT labour force per country.

Programme 6. Women empowerment in the information society

The empowerment of women is widely recognized as being the central issue in determining their status. It is envisaged as a means for promoting gender equality and increasing the opportunities, productivity and effectiveness of women, as well as enhancing their employment opportunities.

The underlying causes of gender inequality are connected to social and economic structure, which is based on informal and formal norms and practices. Gender inequality contributes to poverty, slows economic growth and reduces human well-being.

The two main aspects of the empowerment of women are economic and social empowerment. Economic empowerment deals with issues related to poverty reduction and access to productive resources. Social empowerment manifests itself in various forms, the most obvious of which include social stereotyping, political representation, access to education, health, shelter and sanitation. Both economic and social aspects are important for building a regional information society as the success of this society depends upon the active participation and involvement of both men and women.

(a) Mapping programme 6 to the strategic framework

In view of the above, programme 6 focuses on the creation of an enabling environment and capacity-building for women and, so, has two dominant tracks as illustrated in table 6. The programme also aims to provide relevant policies, strategies, digital content and ICT applications as well as increasing access to information and knowledge in order to empower women to actively participate in the information society. These are the medium impact level tracks, namely tracks 1, 3, 7 8 and 10. The other tracks are on a low impact level with this programme.

TABLE 6. MAPPING PROGRAMME 6 TO STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies		X	
Area 2. ICT infrastructure			X
Area 3. Access to information and knowledge		X	
Area 4. Capacity-building	X		
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment	X		
Area 7. ICT applications		X	
Area 8. Cultural, linguistic and local content		X	
Area 9. Media			X
Area 10. International and regional cooperation		X	

Notes: High impact level refers to directly serving the major goals of a given track.

Medium impact level refers to achieving positive benefits for supporting a given track.

Low impact level refers to producing indirect activities for advancing a given track.

(b) *Outline*

Objective: To promote gender equality and empower Arab women through the various uses of ICT in order to enable them to play a proactive role in the development of a sustainable information society.

Challenges: Although progress to solve gender inequality in the region has been recorded in recent years, the gender gap continues to pose a challenge throughout the Arab world and gender discrimination remains common.

In 2003, the total population of Arab women was approximately estimated at 153 million, representing 50 per cent of the total Arab population and the majority of the population aged above 60 years. However, gender-based inequality and discrimination undermine the opportunities available to women and their ability to fully exercise their basic human rights. In 2003, 44 million adult women remained illiterate. In that same year, 5.8 per cent of seats in Arab national parliaments were held by women, compared with 14.5 per cent in Asia and 15.1 per cent in Sub Saharan Africa. In 2001, the unemployment rate among Arab women was estimated at 17.1 per cent as compared with that of men, which was estimated at 10.6 per cent.¹¹

Strategy: Based on the recommendations made at the Regional Seminar on Women and ICT held in Cairo from 17 to 19 December 2003, the strategy focuses on building the ICT capabilities of women, improving their employment opportunities in the information society and increasing their participation in the decision-making process of building the information society.

Programme 6 seeks to achieve the advancement of women through the use of ICT in different socio-economic spheres and will collaborate with the existent women's movement and widespread network of NGOs with a strong grass-roots presence and deep insight into the concerns of women in order to mainstream a gender perspective in the development process as catalysts, participants, and recipients.

The above objective will be advanced by analytical studies, policy formulation and devising applicable strategies. Cooperation with local, regional and international agencies will contribute to harnessing ICT in a manner that can best serve women as well as implementing the necessary mechanisms for implementation and monitoring.

Expected accomplishments	Indicators of achievement
(1) Increased awareness of the potentials offered by ICT to empower women.	(1.a) Increased number of countries adopting positive discrimination measures in favour of women in national policies; (1.b) Increased number of countries and NGOs implementing actions for harnessing ICT to empower women.
(2) Increased confidence, trust, participation and role of women in the process of building the information society.	(2.a) Increased percentage of women participating in decision-making related to building the information society; (2.b) A regional body to promote and advance empowerment of women through the use of ICT.
(3) Increased social and economic empowerment of women through the use of ICT.	(3.a) Increased number of ICT-literate women; (3.b) Increased percentage of women employed by sector.

¹¹ ESCWA, *Where do Arab women stand in the development process? A gender-based statistical analysis*, (E/ESCWA/SDD/2004/Booklet.1).

Programme 7. Information society measurements

Building an information society in which citizens of the region can access and use information resources on an equal basis for sustainable economic and social development is a multi-stakeholder process with multiple dimensions. A major component of this process is measurement of the readiness, intensity, impact and outcome of the information society in order to evaluate and monitor its progress and provide a comparative analysis of the level of maturity achieved in the region.

There are a large number of available ICT measurements in the form of indicators, indexes and benchmarking data. Some of these measurements will lose their relevance with time as the information society evolves and technology is further developed. In addition, measuring the information society continuously requires data to be collected and maintained in an accurate and timely manner.

(a) Mapping programme 7 to the strategic framework

This programme is mainly related to area 1 of the strategic framework, as indicators provide an informative, timely, and constructive approach to the formulation of policies, which contribute to building an information society. It also has a medium impact level on areas 3, 4, 6 and 10 as illustrated in table 7. All remaining tracks are also affected by information society indicators although to a lesser degree.

TABLE 7. MAPPING PROGRAMME 7 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies	X		
Area 2. ICT infrastructure			X
Area 3. Access to information and knowledge		X	
Area 4. Capacity-building		X	
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment		X	
Area 7. ICT applications			X
Area 8. Cultural, linguistic and local content			X
Area 9. Media			X
Area 10. International and regional cooperation		X	

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) Outline

Objective: To devise a comprehensive set of indicators with a view to evaluating and monitoring the development of the information society in the region and measuring progress in the use of ICT in order to achieve the United Nations Millennium Development Goals (MDGs) and serve as motivation to enhance action in the spirit of WSIS.

Challenges: The large number of available measurements for the ICT sector reveals the complexity of determining a unified set of measurements for the region while also attempting to accommodate broader issues for measuring the information society. Another challenge is related to the split of indicators into three levels, namely, global, regional and national. This hierarchy of levels requires close examination of the characteristics required at each level in order to construct proper indicators for the region. Measurement of the information society should reflect the specificities of the region and provide comparative indicators with other regions. Other challenges are associated with obtaining data from official country sources and subsequently managing and maintaining them while also enabling international cooperation.

Strategy: Programme 7 has the advantage of capitalizing on the efforts already expended by ESCWA in exploring possible modalities for the collection and manipulation of data and their presentation in a form that is easy to manipulate and analyse. Research, studies, meetings and advisory services will contribute to the advancement of this programme. For greater efficiency and effectiveness, partnerships will be forged with other United Nations regional commissions that have also embarked on similar endeavours as well as other relevant United Nations agencies and national government organs, such as national statistical offices. The programme will provide the means to develop and maintain a comprehensive set of comparative information society indicators on a continuing basis and, also, launch a mechanism to manage and ensure that the data collection process is accurate, timely and sustainable and conducted at intervals suitable for decision makers and other stakeholders.

Expected accomplishments	Indicators of achievement
(1) Improved regional capabilities to develop information society measurements.	(1.a) Increased number of countries that can produce official data for measuring the information society; (1.b) Increased number of comparative ICT indicators in line with global recommended actions from WSIS Geneva phase; (1.c) A regional mechanism for the consolidation, compilation and dissemination of information society indicators data.
(2) Increased ICT tools for measuring the information society.	(2.a) Increased number of applications that facilitate and streamline the measurement and collation of information society indicators.

Programme 8. Promoting DAC

The common language is preserved by DAC, which also facilitates its evolution and promotes cultural diversity while sustaining socio-economic development. Typical applications are digital game, digital video and audio, mobile application and services, content-processing software, digital archiving and e-learning materials. The DAC industry combines creativity, innovation and application with new models of production and distribution aimed at delivering relevant content to consumers.

Promoting DAC entails the development of an entire environment that takes into account policy and administrative arrangements, standards, new applications, the quality of published data and research and development.

(a) Mapping programme 8 to the strategic framework

Table 8 maps this programme to the strategic framework of the RPoA and identifies three dominant areas, namely areas 3, 7 and 8. Promoting DAC has a number of additional benefits in areas 4, 6, 9 and 10 as it contributes to the provision of an enabling environment, building of human resources capabilities and fostering international and regional cooperation. As the areas are interlinked, the programme also produces positive spill-over into low impact level areas in the form of activities or small projects that seek to foster and maintain cultural and social diversity.

TABLE 8. MAPPING PROGRAMME 8 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies			X
Area 2. ICT infrastructure			X
Area 3. Access to information and knowledge	X		
Area 4. Capacity-building		X	
Area 5. Building confidence, trust and security			X

TABLE 8 (continued)

Strategic framework areas	Impact level		
	High	Medium	Low
Area 6. Enabling environment		X	
Area 7. ICT applications	X		
Area 8. Cultural, linguistic and local content	X		
Area 9. Media		X	
Area 10. International and regional cooperation		X	

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To build a sustainable DAC industry that produces content and applications suited to local needs and aimed at preserving the rich and varied cultural heritage of the region.

Challenges: The digital content industry is an emerging industry the value of which is forecast to grow to more than US\$ 434 billion by 2006. English content has a 68.4 per cent dominant share of this industry whereas the share of DAC is weak, as less than one per cent of total on-line users worldwide are Arabic language users.¹²

At present, no national or regional industry exists to develop DAC. An Expert Group Meeting on Promotion of Digital Arabic Content was organized by ESCWA in Beirut from 3 to 5 June 2003 with the objective of promoting DAC and identifying strategies and implementation frameworks for the region. One of the important outcomes of this meeting was the launch of the Arab Content Initiative by ESCWA in the fourth quarter of 2003. Another important outcome was the formation of an Arabic Domain Names Task Force (ADNTF) early in the second quarter of 2003 under the auspices of ESCWA. One of the main objectives of ADNTF was to contribute to defining standards for ADNS through the development of a document requesting comments (E/ESCWA/ICTD/2003/14) in order to obtain regional and global recognition. A typical ADNTF project would be to launch a regional registry or business model to commercialize the Arabic domain names registration service. The challenge remains to translate these two endeavours into concrete actions and further develop DAC.

Strategy: Programme 8 will be dedicated to the facilitation of policy formulation and enhancement of regional synergies to develop a sustainable DAC industry that produces content and applications suited to local needs. The programme will support existing endeavours, undertake research and development and invest in new institutional forms, such as incubation schemes and technopoles.

Analytical studies, capacity-building, and advisory services are fundamental to the promotion of the DAC industry and the cultivation of professional skills in the region. Moreover, partnership with the private sector is essential for the fulfillment of this programme.

Expected accomplishments	Indicators of achievement
(1) Improved enabling environment and implementation of the necessary infrastructure for the production, processing, dissemination and protection of DAC.	(1.a) Set up a regional mechanism for supporting DAC initiatives; (1.b) Well-defined Arabic ICT terminology; (1.c) Functioning ADNS; (1.d) Increased number of new applications for Arabic language processing and collaboration.

¹² ESCWA, *Annual review of developments in globalization and regional integration in the countries of the ESCWA region*, (E/ESCWA/GRID/2003/41).

Expected accomplishments	Indicators of achievement
(2) Increased quantity of DAC, in particular that related to the cultural heritage of the region.	(2.a) Increased number of trusted regional sources for producing DAC; (2.b) Increased number of web sites dedicated to Arab history, cultural heritage and linguistic studies.

Programme 9. ICT in education and scientific research

Globalization and the shift towards building an information society and a knowledge economy have had an impact on the socio-economic development process in that they have rendered traditional educational practices insufficient to provide citizens and the workforce with all the necessary skills necessary for economic survival in today's world.

In this regard, ICT in education and scientific research is transforming access to knowledge, the learning process and information delivery. This does not necessarily mean that traditional practices should be abolished but, rather, that conventional teaching, learning and research approaches are merging with new ones that facilitate education and scientific research at any time, in any location as required, while also addressing individual and institutional needs.

New educational methods for solving problems and using appropriate tools for learning, collaboration and for building the information society. Moreover, lifelong learning coupled with accredited and certified training attached to defined skills, jobs and career paths are providing competitive advantages to labour as well as institutions. Within this new context of learning, the learner has become a continuous consumer of knowledge seeking autonomy and innovations in educational systems.

(a) Mapping programme 9 to the strategic framework

Programme 9 has two dominant areas, namely, capacity-building and ICT applications, as illustrated in table 9. Indeed, this programme aims to build the capabilities of human resources including policy makers, decision makers and teachers and examine overall proficiency and success in the adoption of ICT applications in education and scientific research, as well as encouraging their dissemination. The programme also promotes the dissemination of ICT infrastructure and media, access to information and knowledge, and the establishment of an enabling environment for ICT in education and scientific research at a medium impact level. The remaining areas are low impact level.

TABLE 9. MAPPING PROGRAMME 9 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies			X
Area 2. ICT infrastructure		X	
Area 3. Access to information and knowledge		X	
Area 4. Capacity-building	X		
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment		X	
Area 7. ICT applications	X		
Area 8. Cultural, linguistic and local content			X
Area 9. Media		X	
Area 10. International and regional cooperation			X

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To enable individuals and institutions to make use of ICT in education and scientific research in order to achieve socio-economic development with particular emphasis on nurturing life-management skills and increasing labour force competencies.

Challenges: Collaboration between leaders in the e-learning movement and policy makers in education are insufficient to shape e-learning practices and promote ICT in scientific research, thereby reducing the ability of their countries to participate in the global knowledge-based economy. This situation also has an impact on the high illiteracy rate across the region, in particular among women.

The main challenge for e-learning is to overcome resistance against the transformation of the existing education infrastructure and increase human intellectual capital, in particular that of the knowledge workforce of the region. Unemployment, estimated at between 10 to 19 per cent in the region, and underemployment pose a challenge in that fundamental changes are needed in order to develop new and appropriate skills that meet the needs of the labour market in the twenty-first century.¹³

Strategy: The strategy will concentrate on broader educational reform in order to disseminate e-learning for socio-economic development, with a view to increasing the competitiveness of institutions and improving the life-management skills of citizens. Two major components required for implementation of this programme are enhancement of the capabilities of policy makers and teachers through in-depth analysis of e-learning systems and provision of technical assistance services during the implementation phase. Research and analytical studies, meetings and capacity-building through workshops and advisory services will also contribute to the promotion of ICT in education and scientific research. The programme will focus on developing informed, responsible and contributing citizens. Partnerships will be forged with major stakeholders including strategic regional and international partners, such as UNESCO.

Expected accomplishments	Indicators of achievement
(1) Improved mechanism for the allocation of more resources and streamlined processes for the implementation of ICT in education and scientific research projects.	(1.a) Improved policies that facilitate and attract projects for ICT in education and scientific research; (1.b) Increased allocation of resources for the implementation of e-learning projects, in particular in vocational training institutions; (1.c) Increased number of teachers equipped with the skills to use ICT in education and scientific research.
(2) Increased ICT applications and services in education and scientific research projects, in particular those designed to develop life-management skills and labour force competencies.	(2.a) Increased number of e-learning services, such as virtual, distance and lifelong learning services, in particular for pre-university and vocational training educational systems; (2.b) Increased number of networks among research and development activities in the region as well as with other regions; (2.c) Increased number of individuals benefiting from the programme by improving their human welfare; (2.d) Increased number of institutions benefiting from the programme by increasing the intellectual capital of their human resources.

¹³ ESCWA, *ICT for poverty reduction and employment creation in Western Asia: a strategic plan*, (E/ESCWA/ICTD/2004/WG.1/4).

Programme 10. Increasing community access with emphasis on the marginalized and disabled

Empowerment through community access has proven to be an effective mechanism for supporting economic development and reducing the digital divide. This programme will act as the vehicle for launching a number of services based on formal and informal ICT-based training, and will expand to offer a number of thematic applications in the areas of e-health, e-commerce, e-government and e-learning.

Marginalized communities could be served well by ICT. With proper adaptations, ICT could become an equalizer of abilities and assist the integration or reintegration of the disabled in mainstream life and their active participation in building the information society. The quality of life of the disabled could be considerably enhanced by ICT: persons with visual disabilities could be compensated with screen readers that redirect content to speech or Braille output; persons with hearing disabilities could request subtitle for audio content or benefit from sign language on web sites; persons with cognitive or neurological disabilities could access web sites with reliable navigation and no distracting objects and persons with physical disabilities could obtain special support for keyboard and mouse use.

Programme 10 will identify, adapt and implement ICT-based applications to empower the disabled and serve marginalized communities by acting as central point for personal and entrepreneurial skill development, employment creation, lifelong learning and community development. Different access models will be adopted to meet the needs of local communities, such as ICT community centres and Internet kiosks.

(a) *Mapping programme 10 to the strategic framework*

The mapping of this programme to the areas identified in the strategic framework of the RPoA reflects in qualitative terms the high impact that this programme has on capacity-building and access to information and knowledge. These two dominant areas are illustrated in table 10. The programme also aims to provide relevant policies, strategies, digital content and ICT applications as well as contributing to an enabling environment and seeking international/regional cooperation in order to empower marginalized communities to actively participate in the information society. These are the medium impact level areas, namely, areas 1, 6, 7, 8 and 10. This programme does not directly fulfil the goals of low impact level areas but acts as a derivative programme that generates a number of actions aimed at partially solving issues related to areas 2, 5 and 9.

TABLE 10. MAPPING PROGRAMME 10 TO THE STRATEGIC FRAMEWORK

Strategic framework areas	Impact level		
	High	Medium	Low
Area 1. Policies and strategies		X	
Area 2. ICT infrastructure			X
Area 3. Access to information and knowledge	X		
Area 4. Capacity-building	X		
Area 5. Building confidence, trust and security			X
Area 6. Enabling environment		X	
Area 7. ICT applications		X	
Area 8. Cultural, linguistic and local content		X	
Area 9. Media			X
Area 10. International and regional cooperation		X	

Notes: High impact level refers to directly serving the major goals of a given area.

Medium impact level refers to achieving positive benefits for supporting a given area.

Low impact level refers to producing indirect activities for advancing a given area.

(b) *Outline*

Objective: To empower the marginalized and disabled and stimulate further socio-economic integration of remote communities through the various use of ICT with a view to increasing employability and social inclusion.

Challenges: The region suffers from a widening digital divide. In the majority of Arab countries, proper ICT infrastructures are largely lacking in rural and remote areas. Numerous citizens in such areas lack access to a telephone in their homes, let alone the Internet. In some countries, illiteracy and poverty are the main obstacles to socio-economic development. Empowerment through ICT is contingent upon the development of a culture for accessing information and seeking knowledge. Capacity-building and resource allocation at the community level are essential for nurturing and supporting the development of this programme in a sustainable manner.

The main challenges include the following: (a) the lack of policies and strategies to harness ICT for the disabled and serve marginalized communities; (b) the cost of hardware and software; (c) the cost and effort of maintaining ICT equipment; (d) the need for training; (e) the lack of DAC and Arabized versions of ICT applications; (f) the absence of ICT telecommunications infrastructure in some areas; and (g) the high cost of telecommunications services in some areas.

Strategy: This programme relies on the collaboration of government and community representatives to achieve its objective. Therefore, raising awareness of the need to achieve sustainable development at the community level and build human resources capacity-building, including that of decision makers, is essential for the advancement this programme. Throughout the life cycle of this programme, sustainable community access is a main factor for the measurement of success and the instigation of partnerships among local NGOs, regional organizations and the public and private sectors.

Building on experiences accumulated from similar endeavours in the region, the strategy adopted will disseminate best practices in the region with a view to customizing ICT-based applications in order to meet the needs of marginalized communities and offer, when possible, guidance and counseling services as well as build the ICT capabilities of the disabled by improving their work opportunities and increasing their participation in the decision-making process with regard to building the information society. Different access models will be adopted in order to best serve the characteristics of each community, whether rural or urban, in different socio-economic spheres. Empowerment through access to vital information and wealth creation through added value ICT-based services are typical applications for the launch of pilot projects in the region and establishment of links among communities, government representatives and the private sector.

The programme will include analytical studies and the formulation of the necessary policies and strategies in order to meet the objective described above. Cooperation with regional and international specialized agencies will contribute to the development of innovative methods for increasing access to information and knowledge. Moreover, ICT-based systems to ensure efficient monitoring and review impact assessment will be pursued along with the necessary implementation mechanisms.

Expected accomplishments	Indicators of achievement
(1) Increased involvement of Government and local communities in implementing ICT community access projects.	(1.a) Increased number of member countries implementing strategies and plans of action for empowering individuals, in particular the disabled, and supporting the development of marginalized communities; (1.b) Increased number of sustainable ICT community access projects in the region.
(2) Reduced digital divide for the disabled in the region.	(2.a) Increased number of community access points in marginalized communities specifically geared to teaching people with disabilities and equipped with assistive ICT solutions used to increase, maintain or improve functional capabilities of individuals with disabilities;

Expected accomplishments	Indicators of achievement
	(2.b) Increased rate of ICT literacy, especially for the disabled.
(3) Improved socio-economic development of marginalized communities and development of life-management skills including decision-making and problem-solving.	<p>(3.a) Increased number of ICT-based services, such as e-health, e-commerce, e-government and e-learning;</p> <p>(3.b) Number of individuals from marginalized communities who have increased their welfare as a result of this programme;</p> <p>(3.c) Increased percentage of disabled employed by sector.</p>

IV. PROJECTS

A. INTRODUCTION

While previous chapters discuss the strategic framework of the RPoA and propose regional partnership programmes, the present chapter is dedicated to the development of the RPoA into regional projects for building the information society. The proposed projects are regional in scope, the majority has national components and some include specific pilot projects in selected ESCWA member countries.

The structure of the RPoA is top-down, in that it focuses on key areas with regard to the information society and partnership programmes, whereas projects constitute the building blocks for the development of an integrated information society in the region. From the identification of problems and alignment of intended results within the context of the strategic framework of the RPoA, projects establish a balance between bottom-up and top-down approaches by delivering attainable solutions to the short- and long-term problems associated with the process of building the information society.

The present chapter highlights the importance of including regional projects in the RPoA. It then lists criteria for attaining the maturity required in order to ensure a good start for project implementation and facilitate the participation of parties interested in proposing and/or implementing projects aimed at building the information society in the region. A list of proposed projects for each of the programmes recommended in chapter three is presented in the final two sections of the chapter and the efforts expended by the Task Force on Implementation of the Arab Telecommunications and Information Strategy and the resulting list of regional priority projects for Arab Governments recommended for inclusion in the RPoA are reviewed.

B. PROJECTS AND THE RPOA: ACTIONS AND RESULTS

Large-scale regional endeavours are often hindered by a number of challenges that arise, for the most part, from issues related to the holistic nature of these endeavours and the resource-related complexities encountered during implementation. Proposing projects within the RPoA offers many potential advantages, including improved two-way communication between the stakeholders and horizontal communication among project initiators during the process of building the information society. Engaging stakeholders in the adoption and implementation of regional projects sets in motion a process that builds incrementally upon the results of completed projects and paves the way for other, more elaborate, projects with higher visibility components and greater direct impact on society as a whole.

The inclusion of projects in the RPoA offers the following potential benefits:

- (a) Added on-the-ground activities leading to tangible results;
- (b) Increased bottom-up articulation of development needs;
- (c) Improved information flows through better-developed collaborative networks;
- (d) Improved advocacy to policy and support to the RPoA;
- (e) Broader scope and large scale for building solidarity by serving different needs and goals;
- (f) Greater sense of appropriation among stakeholders;
- (g) Enhanced partnerships with beneficiaries.

C. PROJECT CYCLE: FROM CONCEPTUALIZATION TO IMPLEMENTATION

A typical project development cycle is described below, including the drafting of project concept papers, production of project documents, identification of funding agencies and potential partners and start of implementation.

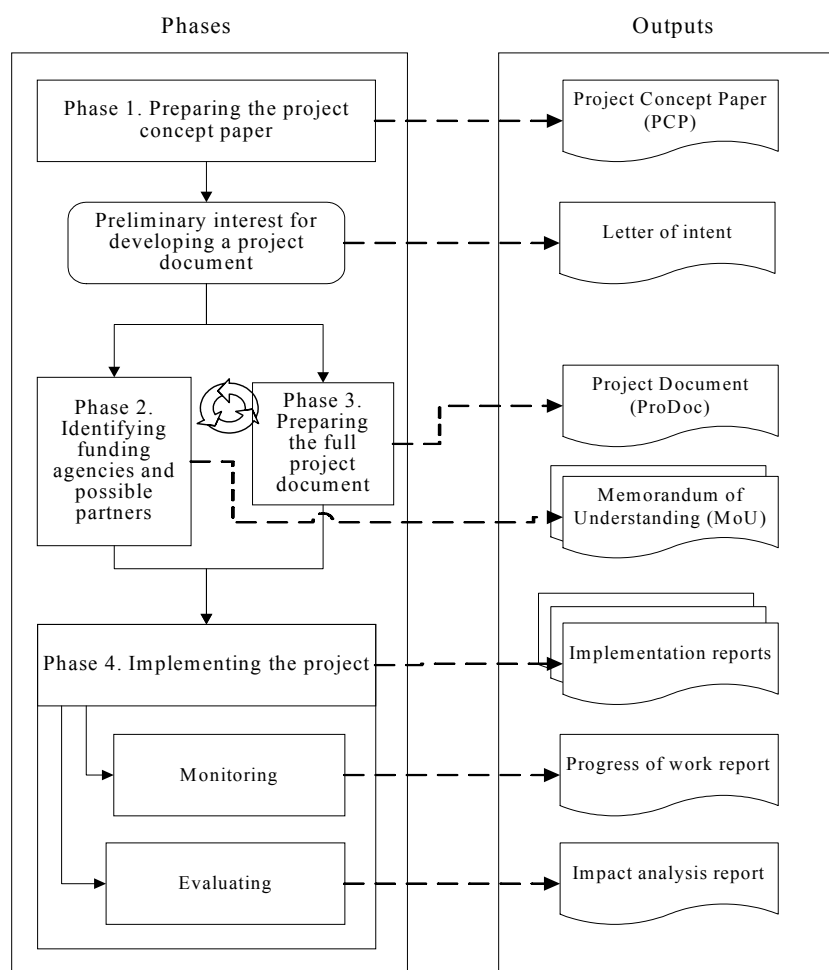
The objective of the present section is to identify the criteria for reaching the maturity required in order to achieve successful project implementation and facilitate the participation of parties interested in proposing and/or implementing projects aimed at building the information society in the region. These

criteria, which combine to form one of the distinctive characteristics of the RPoA,¹⁴ namely, implementation upon maturity, are as follows:

- (a) Production of a clear and complete project concept paper using a template that streamlines the exchange of information and perception of project objectives;
- (b) Provision of a conducive environment in order to solicit collaboration and cooperation from stakeholders;
- (c) Identification of a leading agency or champion for the project;
- (d) Production of a comprehensive project document using the results-based management paradigm;
- (e) Completion of partnership subscription based on the added value that each partner could contribute to the project;
- (f) Allocation of necessary funds and required resources;
- (g) Agreement on partnership model including implementation and monitoring mechanisms.

The four phases of a project cycle with the associated outputs are illustrated in figure II, below.

Figure II. Project development phases



Source: ICTD, ESCWA.

¹⁴ A full list of the distinctive characteristics of the RPoA is provided in chapter one of the present document.

The present overview is intended to serve as a guideline to encourage contributions from stakeholders and further develop added value regional projects.

1. Preparation of the project concept paper

During this initial concept phase, the leading agency addresses a topic of interest based on its mandate and scope of action. Such topics coincide with one or more areas and partnership programmes described in the strategic framework of the RPoA. Focus is on the regional nature of the problems and projects that can create value and progress towards the development of a sustainable information society would be proposed. A project concept paper is prepared based on a template (see annex II) and submitted in order to initiate a call for partnership.

2. Identification of funding agencies and possible partners

Once the project concept paper is developed, potential partners and funding agencies can be approached. There are several models for cooperation within any newly founded partnership and different stakeholders will address similar issues differently within the scope of their mandate and strategic development goals. The scale of some projects makes it necessary to embark on multi-stakeholder partnerships involving the public sector, private sector, NGOs and other international agencies in order to achieve the desired objectives. Specific partnership models such as the public-private partnership (PPP) model can be adopted in order to build on the individual strengths of these two sectors.

The selection of partners should be made with empowerment and inclusion in mind. In order to develop sustainable environments for growth and development, multi-stakeholder partnerships should include partners that can retain transferred know-how and, possibly, construct self-funding operational models. The availability of different resources within any given project is essential to its continuity and sustainability beyond the time limits described in the project document. Resource contribution can take many forms including in-kind and financial contributions and human resources.

Funding agencies that have adopted a project document would look for transparency and accountability in meeting the desired objectives. It is important to address budget constraints and account for hidden costs within very stringent rules in order to ensure that funding agencies understand the nature of the project partnership. Such agencies would require well-defined indicators of achievement and progress milestones within the guidelines of results-based management methodology. Funding agencies should also indicate the proper channel through which extra-budgetary spending is to be considered and impose their methodology for project selection as well as monitoring and evaluation of progress.

As partnerships are forged and financing secured, stakeholders should jointly draft a Memorandum of Understanding (MoU) that clearly defines roles, responsibilities and contributions. An MoU might diverge from the findings of the project concept paper and focus attention on a specific subset of objectives as dictated by partnership specifics.

3. Preparation of the full project document

Once potential partners are identified through the call for partnership and initial approval to elaborate upon the concept paper is received, the lead agency would develop the concept paper into a full-scale project document that would also contain implementation and monitoring mechanisms and assign roles and responsibilities to the different partners. Budget details and activity costs should be clear at this point, enabling the management team to set review points and report on progress. Reference to partners includes lead agencies, beneficiaries, supporting agencies, funding agencies and the project management team. These partners should achieve high consensus on vision, goals, milestones, management processes and financial requirements. The choice of partners should be based on their ability to add value and lend sustainability to the project. New partners and funding agencies could also be included in the process described above. Phase three could be launched in parallel with phase two.

Projects would be adopted for implementation in view of the level of maturity attained, as this is the direct result of the level of commitment expressed by partners and the perceived impact on beneficiaries. Perception of the maturity level is likely to differ between partners and projects depending on the beneficiaries and impacts. Partners in the private sector might rate project maturity based on forecast market development goals and the impact of the project on expanding business possibilities and providing good rates of return on investment, whereas NGOs might address maturity from a development perspective and adopt projects with the highest impact on their areas of interest.

Technical assistance should be sought in the formulation of project documents from experts who could add value to them and push them further along the track towards maturity.

4. *Project implementation*

During the project implementation phase, the efforts and documents produced during preceding phases are transformed into palpable results.

The implementation phase should be based on a model of continuous feedback that indicates conformity with the proposed budget and milestones of progress. Indicators of achievement specified in the project document serve as the channel for feedback that supplies information on the impact of the project on beneficiaries. The production of periodic implementation and progress reports to stakeholders and funding agencies in order to measure and quantify progress allows all concerned parties to monitor the project and deal with implementation challenges in the best way possible.

During the implementation phase, activities should be developed in a manner that builds and enhances appropriate local ownership from the outset in order to mainstream ownership and assure sustainable operations.

Upon completion of the project, an impact analysis report would be prepared by the leading agency and distributed to stakeholders and funding agencies. The report should contain initial impact findings and issues, describe successes and optimum methods of achieving success and highlight challenges, means of addressing them and the best methods of attenuating their impact on the desired outcome.

D. PROPOSED PROJECTS FOR RPOA PROGRAMMES

In June 2004, ESCWA held a round table on Strategies and Plans of Action for Building the Information Society in Western Asia at United Nations House in Beirut. A panel of ICT experts from ESCWA member countries attended. Participants in the meeting agreed on the strategic programme framework for the RPOA and recommended a number of partnership programmes. Proposed projects for each of the partnership programmes were discussed and project concept papers prepared for the projects for which champions or leading agencies were identified.

This list of projects, presented in annex III with the programmes under which they are categorized, is not exhaustive but is based upon the work carried out by designated leading agencies. It is envisaged that more projects will be added to this list, in particular those that would show reasonable rates of return on investment and so be more appealing to funding agencies and the private sector.

E. PROJECTS RECOMMENDED BY THE TASK FORCE ON THE IMPLEMENTATION OF THE ARAB TELECOMMUNICATIONS AND INFORMATION STRATEGY

During the fourteenth session of the Executive Bureau for the Council of Arab Telecommunications and Information Ministers in January 2004, it was agreed to establish a Task Force on Implementation of the Arab Telecommunications and Information Strategy. The Task Force, led by the representative of Saudi Arabia with experts from member countries within the Executive Bureau in addition to experts from other member countries, worked to formalize a number of regional projects, granting priority to projects for building infrastructure, human capacities, an enabling environment and e-commerce.

Based on the recommendations and results of declarations adopted previously, chiefly the Arab ICT Strategy and the Global Plan of Action the Task Force formed two virtual committees. The first of these committees worked on setting the criteria for project selection while the second surveyed projects in the region within the framework of a template for identification.

The list of projects and project proposals underwent a long process of classification that culminated in the Third Meeting of the Task Force on Implementation of the Arab Telecommunications and Information Strategy held in Cairo, 27-29 September 2004. As a result, a final selection was made taking into consideration the scoring process and priorities set by the Council of Arab Telecommunications and Information Ministers. It was agreed that a model feasibility study would be completed for each of the projects in the final selection. The proposed projects, listed in table ten and presented to the Second Regional Preparatory Conference for WSIS, held in Damascus, 22-23 November 2004 are included in the RPoA. Arab governments are urged to cooperate in advancing the implementation of these projects.

The list of projects proposed by the Task Force is described in table 11, below. This list could, in the future, expand to include newly-recommended projects by the Council of Arab Telecommunications and Information Ministers.

TABLE 11. LIST OF PROJECTS PROPOSED BY THE TASK FORCE

Project title	Leading country	Participating country
Establishing a Digital Arabic Library	Sudan	Egypt and Tunisia
Connecting Arab Documentation Centres	Egypt	Sudan and Tunisia
Developing an Arabic Search Engine	Saudi Arabia	-
Total Access Points	Saudi Arabia	-
PC for Every Home	Egypt	Syrian Arab Republic and Sudan
Information Technology Clubs	Egypt	Syrian Arab Republic and Sudan

Source: Report and recommendations of the Third Meeting of the Arab Telecommunications and Information Strategy Formalization Taskforce (Cairo, 27-29 September 2004) (G 15-08/ 03(04/09)/02 - T(0440) (in Arabic).

V. BUILDING PARTNERSHIPS IN ICT

A. INTRODUCTION

The rapid growth and development of the ICT sector has resulted in a high rate of start-up businesses in developed countries. Developed countries have managed to generate a steady flow of new, high-impact firms that create value and stimulate growth by bringing new ideas to the market through new technologies, new business methods or, simply, new and improved ways of performing new tasks. Such firms do not emerge as a natural by-product of free-market institutions nor are they the result of any single factor. In all instances, they are the result of a multifaceted system for nurturing high-impact partnerships and entrepreneurship.¹⁵

In the ESCWA region, no such system is in place. Reform focuses on macroeconomic issues such as finance and trade, institution building and the creation of sound banking systems, reasonable interest and exchange rates and stable tax structures. It is anticipated that reforms will be introduced with regard to privatization, deregulation and investment in infrastructure and basic education. In view of the fact that today's economy is knowledge-based, partnerships, entrepreneurs and venture capital should be added to the list.

In order to be of benefit, venture capital needs ventures to support. National mechanisms to feed and sustain ventures are required. Microenterprises tend to involve cottage industries that add little to the economy in terms of productivity or growth and are insufficient to ensure long-term prosperity, as is attracting outsourced work as such work tends to migrate to even lower-cost locales. It is only when a nation is the initiator of new firms and partnerships based on new ideas that unique value is added and real opportunities are created.

B. GUIDING PRINCIPLES

Based on the WSIS Call for Partnerships (Geneva 2003 - Tunis 2005), the following guiding principles for partnerships are proposed:

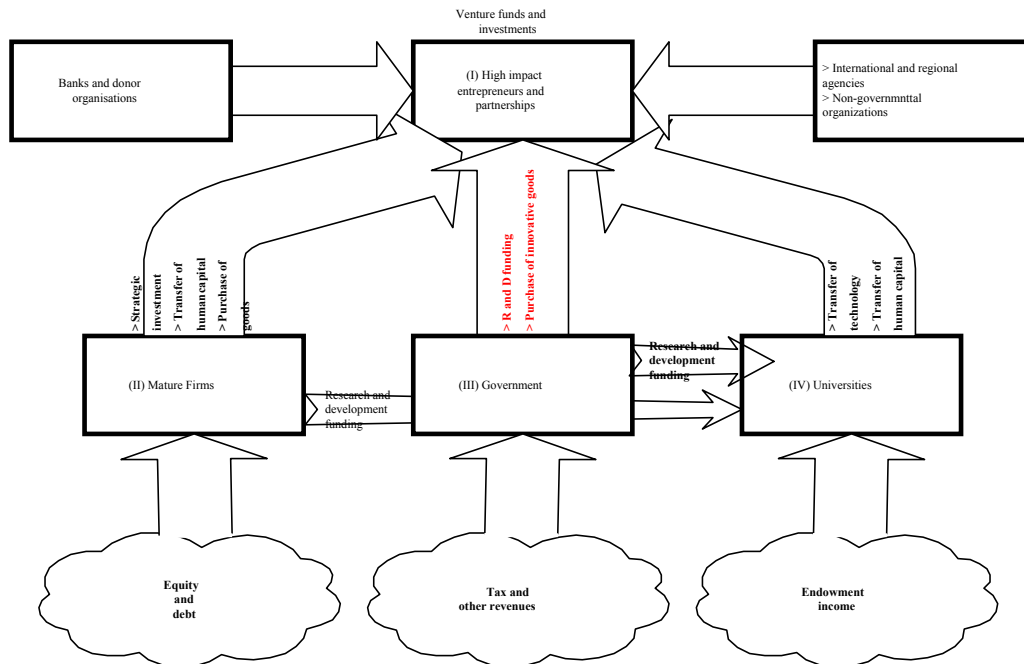
1. Partnerships should be specific commitments by various partners intended to contribute to and reinforce the implementation of a specific objective or set of objectives.
2. Partnerships should be voluntary and self-organizing, based on mutual agreed objectives and shared responsibility of the partners involved.
3. Partnerships should have a multi-stakeholder approach and involve a range of actors in a given area of work. Partnerships can involve governments, regional groups, local authorities, non-governmental and civil society organizations, international institutions and the private sector.
4. Each partnership should define its intended outcome and benefits, have clear objectives and set specific measurable targets and time frames for achievements.
5. Available and/or expected sources of funding should be identified. At least the initial funding (seed money) should be assured at the time of launching the partnership.

C. A MODEL FOR ESTABLISHING PARTNERSHIP AND PROMOTING ENTREPRENEURSHIP

Traditionally, partnership and entrepreneurial systems include four sectors of the economy, namely, high-impact entrepreneurs, large mature national, regional and international firms, governments and universities. With regard to developing countries, it might be practical to modify the model to include banks and donors on one side and international and regional agencies on the other side, as illustrated in figure III.

¹⁵ Schramm, C. J., Building Entrepreneurial Economies, Foreign Affairs, July/August 2004, vol. 83, No. 4, p. 104.

Figure III. The modified four-sector model



Source: Schramm, C. J., “Building entrepreneurial economies”, *Foreign Affairs*, July/August 2004, vol. 83, No. 4, p. 104.

The modified four-sector model provides a useful framework for guiding policies to promote partnerships and entrepreneurship in the region.

Box 1. Entrepreneurship examples from the United States of America (USA)

In 2003, approximately 11 out of every 100 working adults in USA were engaged in entrepreneurial activity, either starting a business or playing a lead role in one less than three and a half years old.

The USA is also unusual in that many of its big, strategically important corporations were created very recently. Dell and Cisco Systems, for example, were started in 1985 and 1984, respectively. New firms have been national leaders in creating wealth and raising living standards.

Compare the birth of two industries: nuclear power and software. Innovation in the first was driven mainly by big companies such as Westinghouse Electric. By contrast, there was no software industry in the early days of computing. Computer programmes were either custom written or sold along the hardware; writing and selling programmes separately was not seen as a viable business strategy.

Source: Global Entrepreneurship Monitor (GEM).

With respect to the first sector, countries should establish the underlying conditions that allow the partnership and entrepreneurial process to flourish, favourable business policies and regulations and access to investment and human capital. In many countries in the region, starting a business or partnership is often fraught with costly and time-consuming bureaucratic procedure. A source of capital for new firms or partnerships is another important factor in this sector.

The second sector includes mature national and regional firms. These usually emphasize the privatization of state-owned companies and liberalization of local business environments in order to help existing firms. However, more should be done to induce genuine symbiosis and partnerships between

established firms and the new entrepreneurs with their orientation to small technology. The private sector is also encouraged to contribute to research and development within universities in order to drive commercial ICT innovations.

With regard to the third sector, governments should do as much as possible to invest in infrastructure that supports partnership and entrepreneurship. They should also subsidize laboratories and testing facilities for shared use as young technology firms often need such facilities but cannot afford their own. Incubators are one way of providing shared facilities which also encourages entrepreneurs to cluster around universities in particular cities, so creating a dense network of peers who can form partnerships and build inventories.

The fourth sector highlights investment in primary and higher education. In many countries of the region, governments are the main investors in education. The links of the fourth sector to other sectors include research and development activities that could provide avenues for partnership.

High-impact entrepreneurship and partnership are likely thrive in countries that pay proper attention to all sectors of the model. The inclusion of banks and donors as well as international and regional organizations has no impact on the paradigm but, rather, provides additional possibilities for exploration.

Cultural factors are not given adequate consideration in the four-sector model. However, these could be taken into consideration on a project-by-project basis. Developing countries should not worry too much about cultural intangibles as, in practice, culture can change as incentives and conditions change. Encouraging partnership and entrepreneurship could be of greater benefit to countries in terms of long-term growth and gains in productivity. Partnership and entrepreneurship coupled with innovative means of financing should serve as catalysts for change and could prove to be important forces for regional stability.

Box 2. Iraqi networking academies partnership

After more than two decades of wars, sanctions and restriction on acquiring ICT, it is now imperative that ICT is fully utilized as soon as possible for communication, management, information, research and in the teaching/learning process. The need exists to establish an electronic highway in Iraqi higher education institutions that will break the isolation of universities and technical institutions.

In this context, ESCWA is at present implementing a project in partnership with Cisco Systems and four well-established Iraqi universities. More than 40 networking academies are being established in a number of cities and towns in Iraq in order to deliver networking technology training to university students and IT professionals and prepare them for the tasks ahead in reconstructing the new Iraq.

Source: ESCWA, *Iraq Task Force*, available at: <http://www.escwa.org.lb/information/iraq/index.asp>.

D. MODES OF PARTNERSHIP

Partnerships can take a variety of shapes and forms. The most common form is national partnerships, although an increasing number of bilateral, regional and global partnerships are being encouraged between countries and private sector enterprises. For numerous developing countries, partnerships involving international agencies and NGOs are also becoming widely recognized and encouraged. Partnerships can also be categorized according to types of stakeholders. The most common form of partnership is PPP, although public-public, public-international and combinations of all elements also exist. In all such partnerships, national or regional barriers should be removed.

Partnership differs from traditional cooperation. Partnership requires a vision and a business model before stakeholders will agree upon it. It also requires well-defined targets and deliverables. One of the main considerations for successful partnerships is financing. Attracting investors and donors is an essential process and should not be undermined. The following points should be considered:

- (a) Sources for financing (national, regional, FDI);
- (b) The role of banks;

- (c) Venture capital, if the partnership is for a venture-type project;
- (d) Calculations of return on investments;
- (e) Marketing and promotion of ideas and projects;
- (f) Incubation, for an initial period;
- (g) Expected role of government(s);
- (h) Legislative, regulatory and investment environments.

E. PARTNERSHIPS IN THE CONTEXT OF THE WSIS PROCESS

A considerable proportion of discussions at WSIS was devoted to issues related to partnership and financing of ICT projects, in particular for developing countries and countries with economies in transition. Global partnerships were emphasized in the Geneva Declaration (WSIS-03/GENEVA/DOC/4-E) in the context of development for the attainment of a more peaceful, just and prosperous world. Partnership and cooperation among governments and other stakeholders, namely, the private sector, civil society and international organizations, was also recognized in the Declaration. Moreover, partnerships in research and development, technology transfer, manufacture and utilization of ICT products and services were identified as crucial for promoting capacity-building and global participation in the information society, in particular those partnerships between and among developed and developing countries, including countries with economies in transition. The manufacture of ICTs presents a significant opportunity for wealth creation to all stakeholders.

A structured dialogue involving all relevant stakeholders, including public/private partnerships, is recommended in the Global Plan of Action at the national level in order to devise e-strategies for the information society and exchange best practices. Each country is encouraged to establish at least one functioning PPP or MSP by 2005 as a showcase for future action. It also recommended that mechanisms for the initiation and promotion of partnerships among stakeholders in the information society should be identified at the national, regional and international levels. Through the adoption of an enabling environment and based on broad access to the Internet, governments should seek to stimulate private sector investment, foster new applications and develop content and PPPs. The Global Plan of Action proposes that PPPs should seek to maximize the use of ICTs in order to improve production in terms of quantity and quality. They should also foster the creation of varied local and national content including that available in the language of users and give recognition and support to ICT-based work in all artistic fields. Through PPPs, governments should also promote technologies and research and development programmes in such areas as translation, iconographies, voice-assisted services and the development of the necessary hardware and a variety of software models, including proprietary open-source and free software such as standard character sets, language codes, electronic dictionaries, terminologies and thesauruses, multilingual search engines, machine translation tools, internationalized domain names, content referencing and general and application software. Media professionals in developed countries should be encouraged to establish partnerships and networks with the media in developed countries, in particular in the field of training.

F. REGIONAL STATUS OF PARTNERSHIPS

Partnerships are heavily influenced by regional and national cultural, behavioural and historical values. The ESCWA region has very few success stories in partnerships and regional actions and is also known to have investment patterns that favour investments in secure sectors such as estates and commercial trades. Investments in industrial projects and venture-type projects, particularly in ICT, constitute a small percentage of investments as such projects have relatively slow rates of return on investment, combined with risk factors higher than other economic sectors. In recent years, the Gulf Cooperation Council (GCC) countries have sought to forge business and industrial partnerships but none of these attempts have yet made a significant contribution to the region and none have been in ICT.

Investors tend to invest outside the region in view of the political instability and lack of a favourable environment or legislation that could inspire confidence in investors. In recent years, Egypt, Jordan and the United Arab Emirates have taken steps to encourage investments and partnerships in ICT projects. In Egypt, such projects have attracted international companies, such as Microsoft and Cisco Systems in addition to national players, as partners in multi-million dollar projects to disseminate ICT throughout the population.

Examples of such projects include Free Internet Access and a PC per Home. The Government of Jordan has facilitated partnerships between its software development sector and international companies and so multiplied the export of software products from Jordan to the developed countries. Jordan has also been successful in partnership projects with United Nations agencies and the World Bank.

Partnerships in Dubai assumed a different form. The Government was able to implement e-government applications successfully by establishing partnerships between government institutions. It was also able to host international and regional companies specialized in ICT or media technology in artificial towns created in order to offer tax-free havens, in Dubai Internet City and Dubai Media City, respectively.

Partnerships with United Nations agencies, the World Bank and NGOs from various developed countries are also common in the region. However, measures and benchmarks of success and sustainability are not always put in place for such partnerships. This situation is notable in the case of Yemen.

In surveying the state of partnerships, no striking examples of PPP in ICT were found at the national or regional level. The short life cycles of many partnerships forged in the countries of the region call for remedial action. However, some government-sponsored projects in the telecommunications sector, such as Arabsat and Thuraya, have developed into regional success stories. The licence newly awarded to Emirates Telecommunication Corporation (Etisalat) that allows Etisalat to operate in Saudi Arabia could be considered as a form of regional partnership. With regard to the funding of ICT projects, Injazat Technology Fund, which is a venture capital fund, is contributing to financing and developing ICT projects in the region.

It is evident, when the digital challenges and opportunities in the region are considered, that governments and private sectors alike remain to harness these challenges and opportunities. The countries of the region share a common language and culture. Some are rich in oil resources while others are rich in human resources. Nevertheless, not many projects have sprung up that took advantage of these values of strength. Areas for possible partnerships and investment could include, but are not limited to, the following topics:

(a) A better integrated telecommunications backbone and network infrastructure with coordinated visions that enhance connectivity, affordability and knowledge sharing;

(b) The content industry;

(c) Government applications that better serve citizens and customers in the region. Best practices and success stories in government applications in one country should be replicated in other countries of the region and so produce an effective multiplier of success. Government applications could also have a regional integration dimension. For example, an excellent area for multilateral partnerships is facilitating movements of trade, services and human resources between countries in the region. The United Nations Conference on Trade and Development (UNCTAD) package that handles customs operations, Automated System for Customs Data, is a case in point;

(d) Other applications in areas such as e-learning, employment creation and poverty eradication.

Conflict-stricken ESCWA members such as Palestine and Iraq, as well as the least developed country in the region, Yemen, deserve special attention when it comes to partnerships and investment schemes. In the case of Iraq, the United Nations Development Group set up the Iraq Trust Fund to support reconstruction projects in Iraq. A number of these projects have substantial ICT components that might be addressed through a variety of partnerships between government, United Nations agencies, the NGOs and the private sector.

Partnerships should also be deployed in order to implement projects that aim to achieve the United Nations millennium development goals of empowering women and bridging the knowledge divide between rural and urban communities. A number of large cities in the region suffer from an economic divide and, therefore, a knowledge divide between different social groups. Projects that address such issues should be encouraged for partnerships and investment.

G. PROPOSED MODALITY FOR RPOA PARTNERSHIPS

The concept and structure of the RPoA highlights and builds upon partnerships with a multitude of development agencies, NGOs and private enterprises with a view to building a sustainable information society. Programmes and projects at the core of the RPoA are specifically designed to foster and catalyze partnerships in ESCWA member countries and induce the interactive participation of a broad spectrum of stakeholders. The present modular design of the RPoA is flexible and allows the substance and scope of its components to be extended through the addition and reformulation of selected modules as required. As such, the RPoA can evolve in order to assimilate future regional and national needs and particularities and provide mechanisms for national, regional and sub-regional partnerships. However, the RPoA will need to be invested with effective operational modalities. Such modalities are provided, to a large extent, through a regional ICT partnership initiative, described in section two below.

1. *The suggested modality*

Once programmes and projects are agreed upon, it is important to develop a permanent mechanism that can trigger the formation of partnerships and seek the required funds through a robust and comprehensive approach that is both systematic and focused.

All projects start with an idea or an articulated concept and gradually mature into a solid project proposal. A project cannot reach maturity on its own, in particular in the case of regional, MSP or PPP projects. Hence, many project ideas will not materialize and so never be launched before such maturity is reached. The phase before the commitment of partners is secured is the most difficult as it entails the greatest effort and requires will, persistence, vision, leadership and strategic relations as well as seed finance. Building partnerships is a task that requires considerable expertise and robustness.

2. *ICT Partnership Initiative*

According to the Damascus Call for Partnership¹⁶ and amongst other mandates, ESCWA together with other key regional organizations is required to:

- (a) Follow-up on implementation of the RPoA;
- (b) Intensify cooperation with other regional organizations;
- (c) Provide consultative services to member countries in areas related to implementation of the RPoA;
- (d) Formulate a mechanism for partnership through an interactive Internet web site for activating partnership and creating an effective space of interaction among stakeholders in order to attract new partners and support continuous dialogue and timely progress reporting and evaluation for effective implementation of RPoA programmes and projects.

In view of the above, it is important to establish a permanent mechanism for triggering the coherent formation of partnerships through aggregating vision, leadership, finance, strategic relations and project management expertise. It is essential to launch a regional partnership initiative in order to achieve the following objectives:

- (a) Broad implementation of the RPoA;
- (b) Activation of ICT partnerships;
- (c) Provision of a framework and process through which project maturity can be achieved;
- (d) Mediation and catalysis of the process among stakeholders;
- (e) Seeking finance for projects earmarked by governments and major stakeholders.

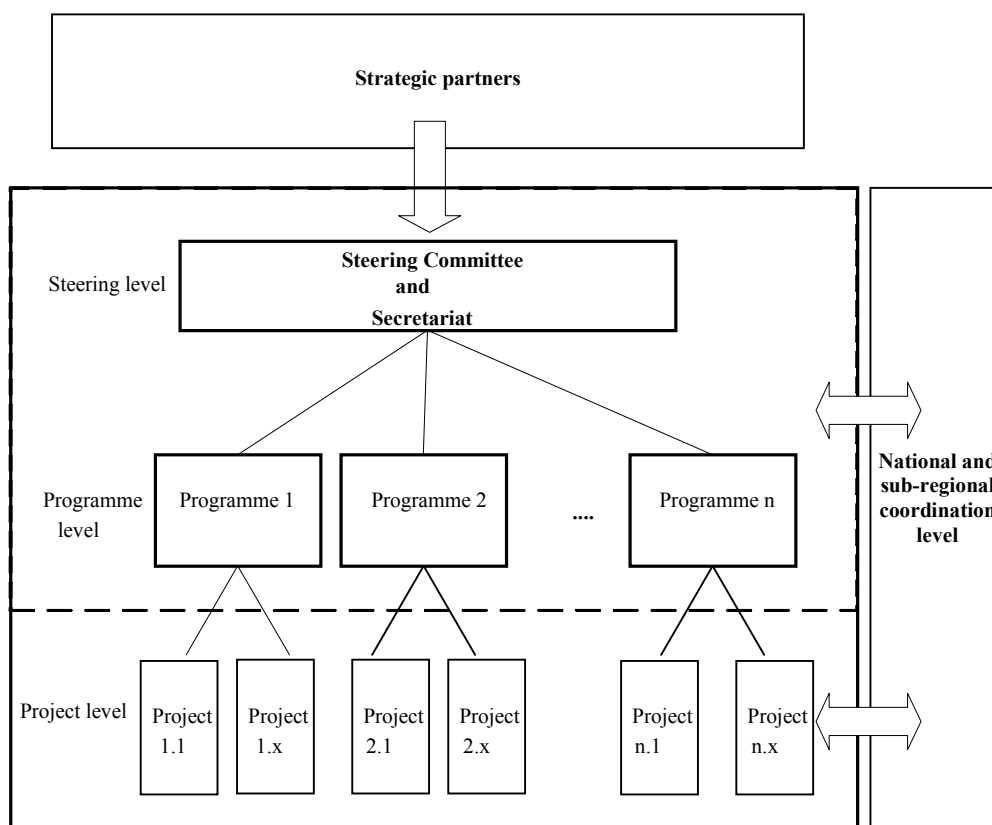
¹⁶ Available at: <http://www.escwa.org.lb/wsjs/conference2/outcome.html>.

In organizational terms, the initiative could take the form of a virtual consortium, representing a number of initial key strategic partners and possible further strategic partners that would eventually evolve into a multilateral consortium of major stakeholders. Such a consortium would need to be highly autonomous, with its own steering committee and programmes, in addition to a dedicated secretariat. The consortium would be engaged in the following core activities:

- (a) Development of a strategy document for each programme;
- (b) Conduct of a country status review for each programme;
- (c) Selection of programme management coordinators;
- (d) Identification of potential partners from different categories;
- (e) Presentation and promotion of different projects in major events and with donors;
- (f) Negotiation of the required agreements until the project reaches the formation stage and the project management team is appointed;
- (g) Monitoring of programme management teams operation;
- (h) Provision of evaluation, feedback and reporting to strategic partners.

The proposed modality incorporates a mechanism for reaching project maturity and, periodically, monitoring progress of work, evaluating results, sharing failures and successes and building a knowledge repository. An illustration of the proposed mechanism is provided in figure IV, below.

Figure IV. The ICT Partnership Initiative



Source: ICTD, ESCWA.

The components of the mechanism illustrated in figure IV are summarized in the following paragraphs.

(a) *Steering committee*

The initiative would be directed at a high level through a Steering Committee, acting in the capacity of a board of directors, that would provide vision, set directions, articulate policies, design maturity frameworks and introduce alterations to the plan, as required.

(b) *Secretariat*

The Steering Committee would be assisted by a Secretariat responsible for management activities, coordination between the various programmes and monitoring administration progress periodically. Secretariat activities would include the preparation and drafting of all paper work including reports to key stakeholders, requests for resources, approval of disbursements and correspondence with various parties. The Secretariat would consist of a small group of administrative and project management staff.

(c) *Programmes*

Every programme should have a consultative team consisting of a programme coordinator, an expert in the field and a research assistant in order to focus on the details of the projects under each programme and so accord more attention to project formulation and promotion, as well as partnerships development. The consultative team would also work, during the lifetime of a project, on creating synergy between established projects and new ideas or project proposals when they emerge, which would contribute to avoiding duplication and inefficiency. Progress and evaluation reports would be submitted to the Steering Committee periodically.

(d) *National and sub-regional coordination*

National and sub-regional coordination with each member country or clusters of countries is required in order to ensure the success of the initiative as a whole, in order to provide an interface between the different programmes and a given country or sub-region. Such coordination is essential in order to validate project ideas, monitor progress on the ground and liaise between project management teams and the various players at the a country or sub-region level, whether these are governments, the private sector or NGOs.

(e) *Online partnerships space*

In addition to human expertise and the framework, the initiative will be heavily reliant on an online forum in which feedback and comments about programmes, project proposals and funding opportunities can be presented and solicited. This forum could be called ICT Partnerships Online (IPO) and would deliver the following functions:

(a) Online subscription of stakeholders to update/add programmes and projects to the RPoA;

(b) Identification of partners and funding agencies for projects;

(c) Creation of partnership networks that bring together governments, universities, mature firms, banks, donors, NGOs, and international/regional organizations;

(d) Digital platform for the development of comprehensive project documents, completion of partnership subscription to projects and securing of necessary funds until the level of maturity necessary in order to start implementation is attained;¹⁷

(e) A medium through which project management teams and stakeholders can exchange information on progress of work and achieved results and share successes and failures;

(f) Development of a knowledge management repository in order to foster the continuous creation, accumulation, use and re-use of organizational and personal knowledge.

¹⁷ Project maturity is reached once the following steps have been completed: (1) preparation of detailed project document with strengths, weaknesses, opportunities, threats (SWOT) analysis; (2) promotion campaign and pledging for funds; (3) commitment of one or more parties to the project and the creation of a partnership; (4) provision of seed money for a pilot implementation phase or initial phase of the project; (5) designation of a project manager.

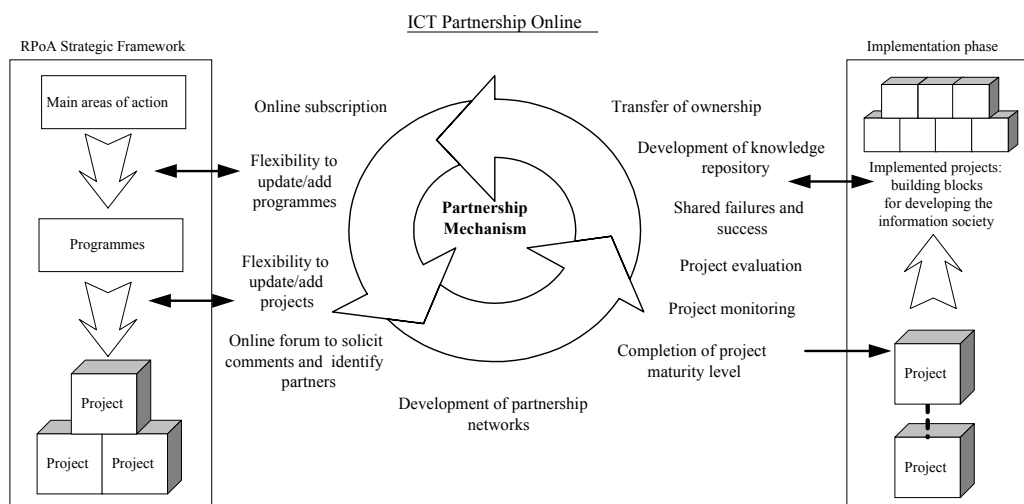
The IPO forum could also host articles, reports or studies on range of themes related to programmes and projects. Upon reaching maturity, each project would become an independent entity and would be encouraged to use IPO as a communication tool, in order to provide guidance and feedback to governments and stakeholders as well as exchange information and build the knowledge management repository. The partnership network would allow project stakeholders to mitigate the financial risks involved when exclusive partnerships with current donors come to a sudden end. Moreover, the knowledge management repository would empower project management teams with information that would contribute to avoiding duplication of efforts and the tools for reducing inefficiency.

Initially, incentives should be devised that could increase participation in the partnership network, for example through the provision of advertising space on the web site, issuance of a monthly electronic bulletin on projects and achieved results with brief announcements about new participants.¹⁸ As the number of stakeholders contributing to the IPO forum increased, the content of the forum would become richer and more valuable as it would increasingly attract strategic partners and funding agencies. The proposed IPO forum would require funds in order for it to become autonomous and self sustainable. Securing seed money at the time of launching the initiative would be vital to covering the expense involved in setting up the web site, online forum, partnership network and knowledge database. Marketing expenses, operational charges, management and consulting fees should also be taken into consideration, along with the provision of the seed fund. The launch of an IPO forum for promoting and networking interested partners and investors in the implementation of the proposed projects should become more dynamic when such funds are available.

The business model for the IPO forum would eventually progress to charge fees for added value services, as part of the shift away from relying on development aid towards more sustainable operations based on cooperation and partnership.

Figure V provides an illustration of the proposed online space for ICT partnerships. As depicted on the far left of the diagram, the list of programmes and projects of the RPoA would be constantly updated and appended through online subscription services and an online forum. With proper initial incentives, this process would have a multiplier effect as the IPO would attract funding agencies, develop its partnership networks, and establish online “communities of practice”, representing government, the private sector, universities and regional and international organizations, so that domain experts in the respective ESCWA member countries could address specific issues related to a given programme or project. The IPO forum would serve as catalyst to galvanize partnership formation and increase the chances of successful project implementation, so contributing to the development of the information society in the region.

Figure V. Online partnerships space



Source: ICTD, ESCWA.

¹⁸ It would be ideal to secure some seed money to contribute to programme and project development.

Annex I

THE RESULTS-BASED MANAGEMENT SYSTEM

The United Nations Development Programme (UNDP) introduced the results-based management system in 1998.¹⁹ Since then, the system has been used extensively by the majority of United Nations organizations in order to align their planning, reporting, monitoring, evaluation and performance assessment systems with results.

Results-based management is a powerful system that improves strategic planning, enables better justification and allocation of resources, provides ongoing monitoring and assessment of performance and emphasises achieving results with a view to fulfilling development goals. The system, intended to assist United Nations practitioners, programme stakeholders and national policy-makers in planning, monitoring, reporting and assessing results, involves four key steps, namely:²⁰

1. Defining strategic goals that provide a focus for action.
2. Specifying expected results that contribute to the goals defined and aligning programmes, processes and resources behind them.
3. Engaging in ongoing monitoring and assessment of performance and integrating lessons learned into future planning.
4. Improving accountability based on continuous feedback to improve performance.

Results-based management aims to link performance to resources, identify constraints, optimize resource allocation and improve monitoring. Moreover, it strives to enhance the focus of managers and policy makers and lead them to achieve better results by seeking answers to the following questions:

- (a) Why the organization is measuring its strategic goals;
- (b) What the organization needs to measure;
- (c) How the organization should implement measurement.

The main advantage of results-based management is that it enables organizations to become focused on development rather than consumed by the process of transferring resources. This focus, because it places greater emphasis on the results attained and the use of indicators to track progress, leads the organization to act proactively rather than reactively. This paradigm change in organization management culture is illustrated in annex figure I.

Annex figure I. Impact of results-based management on management culture

FROM		TO
Entitlements	⇒	Results
Control	⇒	Delegation
Inputs	⇒	Outputs/Outcomes
<i>Ex ante</i>	⇒	<i>Ex post</i>
Bureaucratic	⇒	Speed
Risk averse	⇒	Opportunity driven
Introvert	⇒	Partnerships

Source: UNDP, *Handbook on monitoring and evaluating for results*, “RBM in UNDP: overview and general principles”, p. 2. Available at: <http://www.undp.org/eo/rbm/index.htm>.

¹⁹ Available at: <http://www.undp.org/eo/rbm/>.

²⁰ Ibid.

THE LOGICAL FRAMEWORK IN RESULTS-BASED MANAGEMENT

The logical framework is the cornerstone of results-based management. Such a framework provides the basis on which programmes are formulated and performance measured and serves as a planning and management tool that facilitates a common understanding of expectations, delineates results at different hierarchical levels based on causal logic, establishes indicators and sources of data, identifies risks or assumptions that support or compromise performance and forms the basis of monitoring and evaluation.

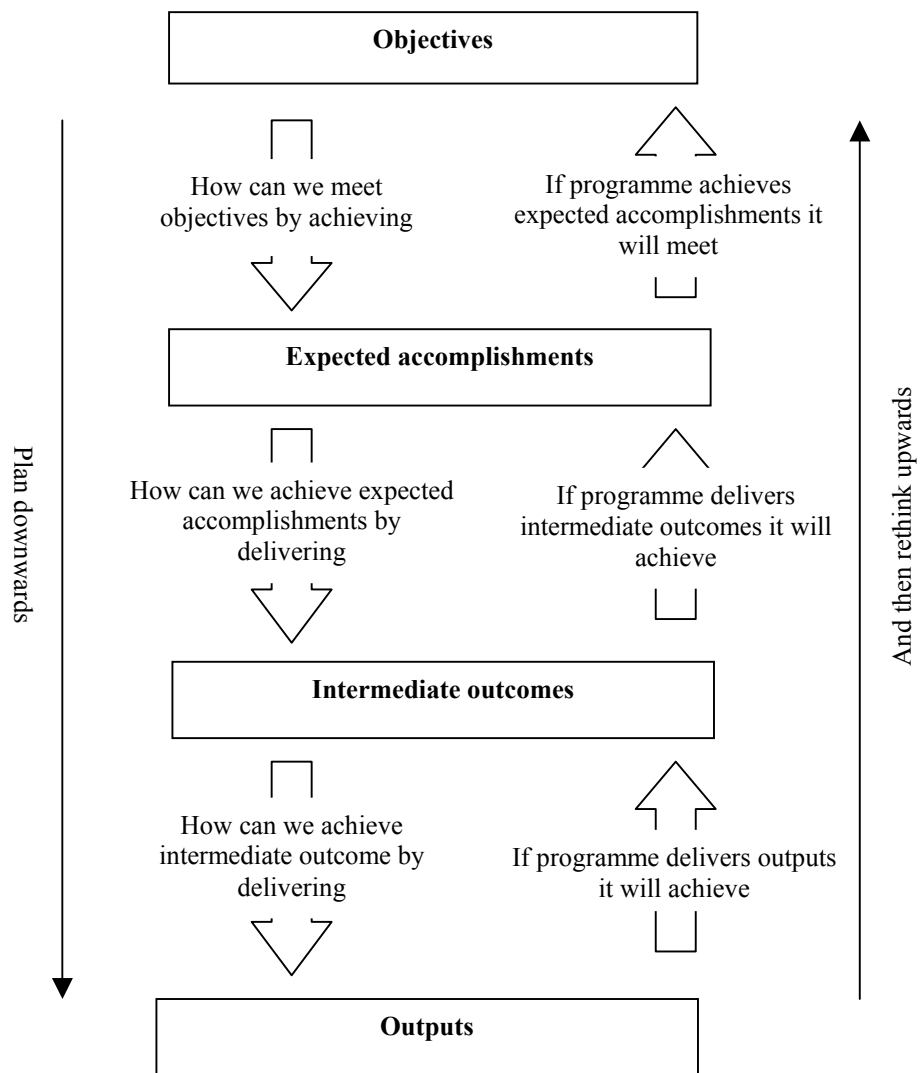
The logical framework requires programme planners to link the components of a programme in a strictly hierarchical and logical way, based on the primary concept of means and ends, following the programme narrative illustrated in the table below.

In order to develop and fine tune the logical framework, it should be read in two directions, first from the top down, with each lower level providing answers to the preceding question “How?” and then from the bottom up, with each level providing answers to questions such as “For what purpose?” and “So what?”.

ANNEX TABLE 1. LOGICAL FRAMEWORK PROGRAMME NARRATIVE

Objectives	<p>Objectives are overall desired achievements involving a process of change that aim to meet certain needs of identified end-users within a given period of time.</p> <p>Objectives describe the intended achievements, rather than the intended actions, of the programme.</p>
External factors (challenges)	<p>External factors are events and/or conditions that are beyond the control of those responsible for activities but have an influence on the success or failure of the outputs. They may be anticipated or assumed.</p> <p>External factors describe the external challenges that could influence the success of the outputs.</p>
Strategy	<p>Strategy underpins and defines the implementation plan or method that serves an important function in achieving evolutionary success for the programme.</p> <p>Strategy describes the method to be followed in order to achieve programme goals.</p>
Expected accomplishments (results)	<p>Expected accomplishments are a desired outcome involving benefit to end-users and are expressed in quantitative or qualitative terms. They are the direct consequence or effect of the generation of outputs and lead to the fulfillment of a certain objective.</p> <p>Expected accomplishments describe that which should happen in order to meet programme objectives.</p>
Intermediate outcomes	<p>Intermediate outcomes are time-bound deliverables and are largely accountable for their delivery provided that external factors hold and risks do not materialize.</p> <p>Intermediate outcomes describe the deliverables through which the expected accomplishments will be achieved.</p>
Outputs (activities)	<p>Outputs are the final products or services delivered by a programme or sub-programme to end-users. Outputs include expert group meetings, studies, training and advisory services.</p> <p>Outputs describe the products and services delivered to target beneficiaries.</p>
Indicators of achievement	<p>Indicators of achievement are used to measure the extent to which objectives and/or expected accomplishments have been achieved and correspond, directly or indirectly, to the objective or expected accomplishments.</p> <p>Indicators of achievement describe that which demonstrates that the expected accomplishments have indeed been made.</p>

Annex figure II. The logical framework



Annex II

GUIDELINES FOR DEVELOPING PROJECT CONCEPT PAPERS AND DOCUMENTS

Annex II provides a guideline for developing project concept papers and document and proposes a template that could streamline the exchange of information and perception of project documents.

1. Preparing the project concept paper

A project concept paper is a concise presentation of a project, addressed to high-level management meetings, that provides the basis for project selection for subsequent consideration by relevant organizations or programme managers. This phase is essential for project concept validation and budget estimation and, also, serves as a starting point for the preparation by relevant entities of detailed project documents. A brief outline of a project concept paper is provided in annex box 1.

Annex box 1. Concept paper structure

The following provides an outline of the different sections of a project concept paper:

Concept paper header

Project identification panel. Contains the project title, lead organization, potential partners, primary objectives, beneficiaries, budget estimate, potential funding agencies, projected starting date and duration.

Executive summary. Provides a summary of the project and should not exceed half a page, as its primary purpose is to provide a glimpse of project objectives, achievements, and implementation strategy.

Concept paper body

Objectives. Describes sought objectives within the scope of the project. An objective is an overall intended project goal. The project will contribute to achieving the objectives through the expected accomplishments. Objectives are concise.

Background and justification. Since project concept papers are addressed to entities and individuals inside and outside an organization, issues should be addressed from a regional perspective. Mapping to MDGs could help enrich this section. Justification involves describing the problem or area of concern and developing the rationale for presenting the proposal as a solution or component of a solution to the problem.

Project description. Contains a detailed explanation of the project, its phases, implementation strategy and potential partnerships. It also details the forecasted direct impact of actions undertaken.

Expected accomplishments and indicators of achievement. Determined by asking the question: What happens after the activities are implemented and what are the results within a sustainable framework? Indicators of achievement are measures used to determine the extent to which stated expectations have been achieved. These should provide a well-defined unit of measurement with a target value. Indicators should be measurable, valid, relevant and verifiable.

Activities. An activity is either a major output, such as a workshop, manual or seminar, or a set of related outputs that result as a distinct product with implications for the impact of the project and is derived from the logic of activities/strategies that explain how the project intends to achieve its expected accomplishment, such as the design, development and establishment of a network. Details of the activities should be included with their strategic objectives in order to mark the path of progress and identify partnerships. Activities should include a monitoring and evaluation item.

Budget and timeline. The project budget should be presented as a one-to-one mapping to activities, detailing sub-activities and related costs as required. Time-line representation would indicate major milestones and activity durations (start and end).

Source: Available at: <http://www.un.org/esa/devaccount/>.

2. Drafting the project document

After presenting the project concept paper and obtaining initial approval, project champions should embark on developing the content of the concept paper into a full scale project document that addresses, in detail, the different components of the project (see annex box 2). The project document should convey clearly the positive impacts on beneficiaries, measurability of success and sustainability of the overall project. These factors combined form the backbone of decisions made by potential partners and funding agencies.

Annex box 2. Project document sections

A project document should serve multiple purposes. It should be a management tool for implementing entities, programme managers and budget divisions, a communication tool with stakeholders, a tool for monitoring and evaluation and the basis of project implementation and fund allocation. The different sections of a project document are outlined below:

Background information. Based on the background provided in the project concept paper, further elaborates and demonstrates how the project fits into the normative and analytical function of a given organization/subprogramme and relates to intergovernmental bodies and MDGs (see <http://www.un.org/millenniumgoals/>).

Problem analysis. Problems can be analysed using one or more of the following techniques:

- *User analysis.* Based on the identification of users, description of the problems that they face, identification of their interests and pin-pointing of their weaknesses;
- *Problem tree.* A typical causal relationship diagram between problem conditions;
- *Objective tree.* The objective tree illustrates the potential objectives that can be derived from problem conditions and is created by transforming problems into objectives describing desirable and achievable future conditions.

Objectives, accomplishments and strategy. Links objectives to expected accomplishments, indicators of achievement and results/components and shows how they contribute towards successful implementation. Explains the adopted strategy for achieving expected accomplishments as well as the major results/components and the activities that contribute to the expected accomplishment.

Monitoring and evaluation. Having identified the indicators of achievement in the previous section, this section details how they will be obtained, along with other project monitoring efforts such as self-monitoring reports and external monitoring. Some funds should be forecasted for these activities within the budget of the project.

External factors. Assesses the risks beyond the control of project management that could have negative consequences on project implementation on the basis of relevance and probability. Some risks will constitute preconditions for initiating some activities, while others could affect activities during implementation or alter achievement of some of the desired objectives.

Implementation arrangements. Details the assignment of responsibilities among the different entities, including owners, partners, funding agencies and beneficiaries and defines how the different actors will collaborate in order to achieve project objectives.

Annexes. Include all tables and supporting material relevant to the proposed project.

Source: <http://www.un.org/esa/devaccount/>.

Annex III

LIST OF PROJECTS PROPOSED IN THE RPOA

A list of regional projects for each programme recommended in chapter 3 is presented in annex III (see table). This is an evolving list that will be adjusted as changes are made to existing projects and new projects added.

All the projects proposed in the RPOA are regional, the majority has national components and some have specific pilot projects in selected ESCWA member countries. The six regional projects recommended by the Task Force on the Implementation of the Arab Telecommunications and Information Strategy are also associated with relevant programmes and flagged as important projects for Arab governments.

ANNEX TABLE 2. LIST OF PROJECTS PROPOSED BY THE RPOA

Programmes	Projects
1. ICT for economic development	1.1. CyberPort for trade and transport 1.2. CyberHaven for regional tourism development 1.3. Connecting Arab ATM networks 1.4. ICT Hub for SMEs*
2. Developing e-government services	2.1. Enhancing government decision support capabilities in the socio-economic fields 2.2. Regional e-government portal*
3. Empowering Arab NGOs in the information society	3.1. Arab NGOs information network 3.2. Arab civil society academy for capacity-building
4. Developing telecommunications infrastructure	4.1. Towards an integrated regional telecommunications network* 4.2. Enhanced broadband access through pilot national applications
5. Developing the ICT sector	5.1. Legislation model for an ICT enabling environment* 5.2. Establishment of ICT incubators* 5.3. Partnership space for incubating telecommunications projects
6. Women empowerment in the information society	6.1. Women empowerment through ICT* 6.2. Promoting the rights of women and children through the use of ICT 6.3. Enhancing Arab women's role in development and decision making through the use of ICT 6.4. Gender evaluation methodology for ICT initiatives (GEM)
7. Information society measurements	7.1. Core ICT indicators* 7.2. ICT indicators database* 7.3. Capacity-building for information society measurement*
8. Promoting digital Arabic content (DAC)	8.1. Establishing a Digital Arabic Library* 8.2. Connecting Arab Documentation Centres* 8.3. Developing an Arabic Search Engine* 8.4. Arabized ICT e-glossary* 8.5. Arabic Domain Name System (ADNS) 8.6. Arab region network for document cataloguing and processing 8.7. Memory of the Arab World

ANNEX TABLE 2 (continued)

Programmes	Projects
9. ICT in education and scientific research	9.1. Regional hub for capacity-building in open source software for education and research* 9.2. IT Teacher training framework* 9.3. Regional scheme for deployment of technical computing software 9.4. Lifelong learning for socio-economic development 9.5. Networking academies 9.6. Learning object repository in Arabic (LORA)
10. Increasing community access with emphasis on the marginalized and disabled	10.1. Empowerment through community access: total access points* 10.2. PC for Every Home* 10.3. Information Technology Clubs* 10.4. Empowerment of the visually disabled through ICT 10.5. Market information systems for agriculture and fishing businesses

* These projects have been earmarked by Arab Ministers of Telecommunications and Information Technology as most important.