

THE INTERNET AS A TOOL FOR EGYPT'S ECONOMIC GROWTH

October 8, 1998

*Prepared by Steve Mintz, President,
International Development Professionals, Inc.
6016 Lincolnwood Court; Burke, Virginia. 22015
Tel: 703-503-0001; Fax: 703-503-0002; E-mail: globetec@ix.netcom.com*

Table of Contents

I. Executive Summary	1
II. Objective, Background and Methodology	3
A. Objective and Background	3
B. Methodology	3
1. Inventory	3
2. Telecommunications Organizations	4
3. General and Specific Applications	4
III. The Evolution of the Internet in Egypt	4
A. The Telecommunications Environment	4
B. The Introduction of the Internet in Egypt	5
C. Adding Egyptian Content to the Internet	7
IV. The Internet in Egypt Today	8
A. Egypt's Internet Network Today	8
B. Internet Service Providers	9
C. Services Provided	10
D. Costs and Quality of Service	11
E. Content Providers	12
1. The Government of Egypt	13
2. Non Profit Organizations	16
3. Information Providers	18
4. Commerce over the Internet	20
F. Putting the Internet in Egypt in Perspective	20
V. Opportunities and Challenges to the Internet as an Effective Development Tool	21
A. Forecasts for Internet Growth in the Future	21
B. Potential Uses of the Internet in Egypt	21
1. Economic Research and Analysis	22
2. Public Transparency and Advocacy	22
3. Professional Networking	22
4. Institutional Networking	23
5. Distance Technical Assistance	23
6. Distance Education	23
7. Regional Approaches	24
8. Business Services	24
C. Challenges Facing the Usefulness of the Internet in Egypt	24
1. Limited Quality, Reliability and High Costs of Services	24
2. Lack of Awareness and Mastery of the Internet and Its Potential	25
3. Language Barriers	25
4. Cultural Views on Information	26
5. Traditional Views on Management	26

6. Low Per Capita Income, Illiteracy and Geographic Concentration	27
VI. Inventory of Internet Use in USAID Programs	27
A. Agricultural Technology Utilization and Transfer	28
B. Business Link Project	29
C. ExpoLink	31
D. International Executive Service Corps	32
E. Development Economic Policy Reform Analysis Project	32
F. Strengthening Intellectual Property Rights in Egypt	33
G. Agricultural Policy Reform Program	34
H. Privatization Program	35
I. Capital Markets Program	37
J. The Economic Policy Initiative Consortium	38
VII. Other Donors	39
VIII. General Approaches	40
A. Support Movement to Private and Competitive Data Networks	40
B. Increase Access to, Awareness of, and Mastery of the Internet	41
1. Increase Access to the Internet	41
2. Increasing Awareness	41
3. Increasing Professional Mastery	42
4. Reaching New Professionals	42
C. Arabization	42
D. Publish Egyptian Content on the Internet	43
E. Create Virtual Egyptian Development Networks	44
F. Experiment with Pilot Applications	44
G. Incorporate the Internet More Fully in USAID Operations	45
IX. Specific Programs	46
A. The Private Sector Commodity Import Program	46
B. Distance Learning for Economic Growth	47
C. Small and Micro-Enterprise Development	50
X. Moving Forward	51
A. Give Study Wide Circulation	51
B. Incorporate Internet in USAID's New Strategy	51
C. General Approaches	52
D. Specific Programs	52
<u>Annexes:</u>	
A. Interviews for USAID/Egypt Internet Study	53
B. Annotated Bibliography	58
C. Survey of USAID Projects	61
D. Acronyms	64

I. EXECUTIVE SUMMARY The Internet was first introduced in Egypt in late 1993, when a small university network was established. The following year, the Egyptian Cabinet Information and Decision Support Center (IDSC) and the Regional Information Technology and Software Engineering Center (RITSEC) took responsibility for introducing the Internet more broadly, offering free Internet services for corporations, government agencies, non-governmental organizations and professionals. In 1996, the Government wisely decided to commercialize Internet services and more than twelve Internet service providers (ISPs) elected to start operations. By early 1997, more than 25,000 Egyptians were using the Internet. Today, there are more than 40 Internet service providers and perhaps 100,000 Internet users in Egypt.

As Internet services became commercial, a decision was made by the Government of Egypt that IDSC and RITSEC could offer bandwidth to would-be private providers, as opposed to obtaining bandwidth directly from Telecom Egypt. The great majority of new ISPs decided to work directly with IDSC/RITSEC as opposed to Telecom Egypt and that remains true today. The primary reason for obtaining bandwidth through IDSC/RITSEC is that the cost is significantly lower, but the trade-off is oversubscribed leased lines with poorer quality of services.

The explosion in the number of companies rushing in to offer Internet services is a reflection of the market's judgement as to the demand for Internet services in Egypt today. Competition is intense at the retail level. This has resulted in a downward trend in prices to Egyptian Internet users, but they are still paying a great deal more than their international counterparts. Egyptian Internet users also face frustrations with the quality of Internet services, a reflection of the limitations in the telecommunications infrastructure. Higher prices and poor quality of services reflect the monopolistic position that Telecom Egypt holds over domestic and international telecommunications services.

In order to develop Egyptian content on the Internet, IDSC and RITSEC began implementing the Egyptian Information Highway Project in late 1995. Pilot information networks were launched covering culture, tourism, health care, environment, education, public services and local government administration. Internet service providers also started to add content. Some ISPs began to differentiate themselves by their target clients, and developed information materials of interest to their market segments (such as financial markets). Leading magazines and newspapers also began to offer virtual editions. Some leading non profit organizations, ranging from business associations to economic research institutions, also developed content for Egypt.

The Internet can play an important role in Egypt's economic development. Projections indicate that there may be 1 million users of the Internet by the year 2003. Potential development applications in the area of economic growth include the ability to conduct research and analysis, add to public transparency and advocacy, permit professional and institutional networking, facilitate distance consulting, create distance learning opportunities, lead to regional networking, and, of course, perform multiple business applications.

However, there are a number of basic constraints on the utility of the Internet as an effective development tool in Egypt. Among them are limited quality, reliability and high cost of telecommunication services; lack of awareness and mastery of the Internet and its potential among professionals and business managers; language barriers (English medium but many Arabic speakers); cultural views on information; traditional views on management; and low per capita incomes and illiteracy among the population and geographic concentration of Internet services.

An inventory was made of USAID project uses of the Internet. Ten projects were explored in greater detail. In general, USAID projects are beginning to utilize the Internet, primarily to conduct research. The next major use of the Internet among USAID projects is for the networking functions of the Internet -- both professional and institutional. There is less appreciation for how the Internet can contribute to public transparency and advocacy and business applications, as well as to distance consulting and distance learning. Other donors have even more limited experiences with utilizing the Internet in Egypt.

There are seven general activities that USAID/Egypt could carry out that would strengthen USAID's economic growth programs in Egypt, and at the same time improve the utility of the Internet as a development tool in Egypt. The first is to support movement to private and competitive data networks, which would result in improved quality and lower Internet service costs. The second is to ensure that all USAID economic growth programs build in access to the Internet and training programs to improve the understanding and professional mastery of that medium. The third to support greater Arabic content on the Internet in Egypt, and to assist USAID partners overcome technical problems associated with web publishing in Arabic. The fourth general approach would be to support efforts that would add more Egyptian development content on the Internet. USAID could also create virtual Egyptian networks on various economic growth topics, experiment with pilot projects, and incorporate the Internet more fully in USAID operations beginning with USAID's new strategy and including new project designs.

Three specific applications are offered. The first is to utilize the Internet to strengthen the Private Sector Commodity Import Program. USAID could develop a web page in English and Arabic; permit downloading of forms; electronic linkages with Egyptian banks, USAID and the Commercial Service; and explain to Egyptian importers how to find American suppliers over the Internet. The second specific application would incorporate distance learning within the Development Training II Project. A review of the economic growth training plan indicates many training activities which could be delivered via the Internet. The third specific application is to support efforts at small and micro enterprise development by utilizing the Internet. A network could be created encompassing USAID's partners, distance learning could be delivered, Arabic content added, and pilot projects undertaken, such as marketing rugs over the Internet.

II. OBJECTIVE, BACKGROUND AND METHODOLOGY

A. Objective and Background. The objective of this study is to develop general approaches and specific activities for USAID to promote private sector-led economic growth in Egypt via use of the Internet. The study was conducted during August and September in Cairo, Egypt, with a four day visit to Alexandria. It builds upon a similar study conducted this year for USAID's Center for Economic Growth on the utilization of the Internet to strengthen economic policy programs.

B. Methodology: The study had three distinct steps: (1) inventory of Internet utilization among USAID, Egyptian counterparts and other donor projects; (2) examination of the Internet and broader telecommunications infrastructure, institutions, and policies and plans in Egypt; and (3) formulation and refinement of general approaches and specific Internet applications for the USAID/Egypt Mission.

Extensive interviews were held with a wide range of individuals and organizations in Egypt. Annex A presents a matrix indicating those interviewed, organized by USAID, contractors/grantees, other U.S. Government agencies, other donors, Government of Egypt and other Egyptian partners, Internet service providers, and information providers. In total, 196 individuals were interviewed, primarily in person, but some over the phone or the Internet. In addition, presentations and discussions were held with interested groups, including (a) the United Nations Development Program (UNDP); (b) English language instructor Internet users; © USAID's health program strategic objective team; (d) Development Training II staff; (e) participants at a USAID "Fifty-Nine Minutes" presentation; and (f) a final briefing for interested USAID staff.

Egypt Internet Study Interviews

- 48 USAID representatives
- 58 Contractors/grantees
- 9 USG officials
- 20 Donor officials
- 31 Egyptian partners
- 17 ISP representatives
- 13 Information providers

An extensive search was also made of literature, both in print and on the Internet itself. Annex B presents an annotated bibliography of materials published both in print and on the world wide web which are relevant to this study. Because of language limitations, the literature review was of English materials, but every attempt was made to ascertain Arabic materials in print and on the Internet from those interviewed in Egypt.

1. Inventory: The inventory was drawn from sources in USAID, its contractors and grantees, relevant Egyptian counterpart institutions, other donors, and other Egyptian private and public organizations. While the emphasis is on economic growth activities (policy and institutional strengthening, as well as operational and business transactions), the inventory looked more broadly at other sectors (e.g. health, population, environment and democracy/governance). Ten (10) Internet applications were selected for special study and analysis because of their perceived potential development impact.

2. Telecommunications Organizations. While the study is focused on development applications of the Internet in Egypt, the state of the telecommunications sector is critical to successful development applications. Thus, the study examined and developed general recommendations for USAID to consider on how the telecommunications environment could be more conducive to realizing the considerable potential of the Internet in Egypt. The contractor met with 14 of the 40 Internet service providers in Cairo and Alexandria. Since these emerging companies are attempting to introduce and service this new telecommunications market in Egypt, they are perhaps the best sources of information on any barriers and constraints to smooth operation of Internet services in Egypt. The contractor also relied on discussions with representatives of IDSC, RITSEC, and the Internet Society of Egypt; all of whom play key roles in the policies, introduction and utilization of the Internet in Egypt. Discussions were also held with U.S. Foreign and Commercial Service staff, and two American telecommunications firms operating in Egypt.

3. General and Specific Applications. Based on the above tasks, the contractor formulated directions that USAID/Egypt could take to better utilize the Internet to achieve economic growth strategic objectives. The initial formulation was a list of potential Internet applications and a rank ordering based on potential to impact positively on achieving economic growth objectives for USAID in Egypt. The contractor reviewed the general features of these applications with USAID/SCS staff to obtain preliminary feedback and reach decisions with respect to which applications to further analyze and develop. Based on this guidance, the contractor developed more detailed general approaches and specific applications for use of the Internet within USAID/Egypt's economic growth programs.

III. THE EVOLUTION OF THE INTERNET IN EGYPT

A. The Telecommunications Environment. Before describing the beginnings of the Internet in Egypt, it would be useful to review the evolution of the telecommunications sector in Egypt, given the importance of that sector to the strengths and limitations of the Internet. By all accounts, the performance of Egypt's telecommunications sector has improved significantly from the early 1980s when there were only a half million phone lines and poor service. Since that time, the number of phone lines have increased more than nine-fold, to more than 4.5 million wire lines by 1997, with a teledensity rate (phone per 100 population) of more than 7.4. The number of communities with phone access increased from seven, in 1977, to 254 in 1997, but is concentrated in Cairo and Alexandria. Internationally, the number of channels expanded substantially, with 8,066 in 1997, compared with 820 in 1977. Microwave links, along with satellite earth stations and submarine cable systems, also helped connect Egypt with the rest of the world. The quality of services have also improved with fiber optic technology and automatic and digital exchanges. In 1996, the Global System for Mobile Communications (GSM) and Very Small Aperture Terminal (VSAT) networks were added.

Telecom Egypt (formerly known as ARENTO until October, 1997) is the predominant provider of telecommunications services in Egypt. In March 1998, Telecom Egypt was transformed into a

joint stock company, the purpose of which is to establish and operate local telecommunication networks, including those with international links. The Government is expected to retain an 80% share in the company, at least initially. The same law that privatizes Telecom Egypt establishes an independent regulatory agency. One month later, the Government of Egypt signed contracts and awarded licenses to two consortia to provide mobile telephone services, the process for which did not occur smoothly.

USAID has been supporting Egypt's telecommunications sector, providing more than \$500 million over the past twenty years. Earlier projects provided consulting services and equipment for switching systems, outside cable networks, and a network operation and maintenance control center. The ongoing Telecommunications Sector Support Project funds infrastructure and technical assistance to the sector, based on progress in policy, institutional, and organizational reforms associated with institutional autonomy, tariffs, regulation, and organizational efficiency.

Despite these significant developments, Egypt's telecommunications sector remains over-strained and underdeveloped. It still required approximately 5.7 years in waiting time to install a new phone in 1995/96. Quality and responsiveness of service remain major frustrations to consumers. According to a policy paper of the Egyptian Center for Economic Studies, the most critical reason for this poor performance is that Telecom Egypt does not face competition or even the threat of competition. Secondly, there is a lack of incentives for efficient operation and consumption. A third reason is the overlapping functions of Telecom Egypt as an operator and regulator. Presumably the recent creation of a regulatory authority and partial privatization of Telecom Egypt will help resolve some, if not all, of these problems. However, the fundamental absence of a competitive market continues to plague telecommunication services in Egypt, including the Internet service provider sector. A final constraint to the further development of telecommunications services in Egypt is the near-prohibition by Egypt's security officials to permitting wireless communications, based on their fear that they would lose the ability to monitor messages when deemed necessary.

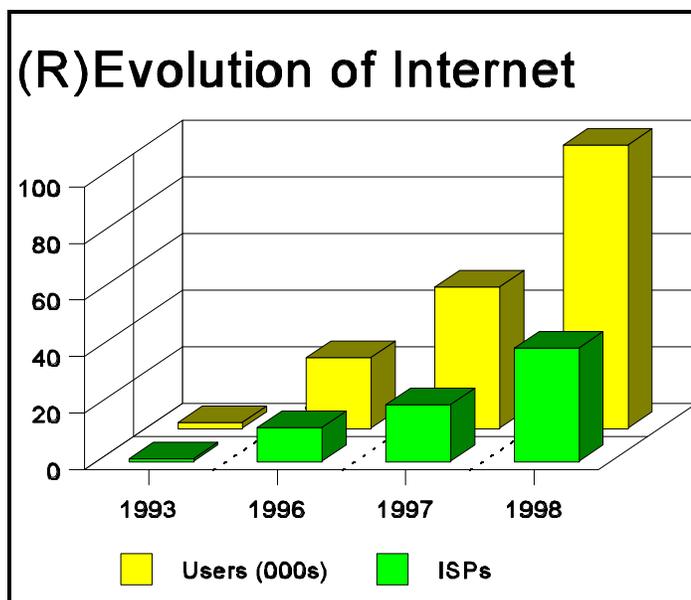
B. Introduction of the Internet into Egypt. Internet services in Egypt started in October 1993 through a 9.6K link between the Egyptian Universities Network, and France which carried the Bitnet as well as Internet traffic. At that time, approximately 2,000 people used the Internet. The following year, the Egyptian domain was divided into three major areas. The academic subdomain (eun.eg) which gets bandwidth via a gateway at the Supreme Council of Universities and provides services for universities and schools; while the (sci.eg) subdomain serves the scientific research institutes at the Academy of Scientific Research as well as other research centers like the National Telecommunications Institute. The two other subdomains established in 1994 were a commercial subdomain (com.eg), and a government subdomain (gov.eg). The latter two are served by a partnership between the Egyptian Cabinet Information and Decision Support Center and the Regional Information Technology and Software Engineering Center. (Telecom Egypt, which as noted above exercises a near monopoly on basic communication services in Egypt, has been focusing mainly on the provision of basic communication infrastructure. However, in 1997, it joined in a venture to provide Internet

services itself.) Interconnectivity was improved in 1994 by establishing 64K digital access to France in cooperation with IDSC and the EUN and Telecom Egypt. This included a number of digital multiplexors as the first digital backbone for data communications in Egypt. The fiber connectivity was provided on SEMEWE-2.

To promote the popularity of the Internet, IDSC and RITSEC provided free Internet access for Egyptian public and private corporations, government agencies, non-governmental organizations (NGOs), and professionals. This lasted for two years, from 1994 through 1996. Such free access is credited with helping to boost the rate of growth of Internet users during the first two years of its introduction in Egypt, with many organizations, especially small and medium sized enterprises, benefitting. Professionals from a wide range of sectors (from trade to manufacturing, tourism, health care, and social services) also started utilizing the Internet. [While free Internet access certainly acted as an incentive to stimulate Internet use, it also acted as a disincentive to the first private Internet service provider in Egypt who had the difficult task of earning revenues when the public sector was giving services away free. Future interventions which seek to promote the utilization of the Internet in Egypt need to make sure that in its enthusiasm, it doesn't limit market opportunities for private service providers.]

In any case, in 1996, the Government wisely decided to replace its free Internet access policy by an open access policy, where Internet services for the commercial domain were privatized, and more than twelve Internet service providers elected to start operation at that time. By early 1997, more than 25,000 Egyptians were using the Internet, representing a much broader spectrum of society than the academic and scientific community in 1994. By the middle of that year, there were a reported 20 ISPs, serving perhaps 50,000 users. Today, there are double the number of Internet service providers and users. The accompanying table illustrates the exponential growth of the Internet in Egypt; by the number of service providers and users.

As commercial Internet services began, a decision was made by the Government of Egypt that IDSC and RITSEC would offer bandwidth directly to would-be private providers, as opposed to obtaining bandwidth directly from Telecom Egypt. The great majority of new ISPs decided to work directly with IDSC/RITSEC as opposed to seeking a relationship with Telecom Egypt. Interviews with a number of ISPs indicated that their decisions to work under the umbrella of IDSC/RITSEC were based on two considerations. The first was that in the early years of Internet



introduction, there was some fear that the Government of Egypt might question the legality of Internet operations. The second consideration was price: As shown below, it is significantly cheaper to obtain bandwidth through IDSC/RITSEC than alone. In any case, a small number of firms decided to obtain bandwidth directly through Telecom Egypt.

Due to the limitations on the telecommunications infrastructure in Egypt, a number of initiatives were launched to obtain satellite services. In 1996, a project to deploy VSAT services for Internet connectivity was initiated to provide rural areas with data communications infrastructure. VSAT complements the terrestrial solutions and has the potential to help reduce the gap in services between relatively well connected regions, such as greater Cairo, and remote and rural locations, such as in Upper Egypt; but it is also very expensive. In 1997, asymmetric communication was introduced to speed up Internet data downloading by relying on a hybrid connectivity solution involving satellites and terrestrial links, known as Zaknet. Zaknet permits faster downloading of files via the Asia Sat II satellite. To date, it has provided its facilities to ISPs, but is beginning to serve corporate clients. Also, in 1998, the first Egyptian satellite, NileSat 101, was launched. NileSat will provide space for supporting digital connectivity and data exchange.

C. Adding Egyptian Content to the Internet. In order to develop Egyptian content on the Internet, IDSC and RITSEC began implementing the Egyptian Information Highway Project¹ in late 1995. It seeks to accelerate social and economic growth in Egypt by (a) promoting and supporting electronic dissemination of information over communication networks; (b) establishing pilot information highways in important sectors to promote socio-economic development; © contributing towards open and wide access to the national information highway; (d) encouraging and supporting the development of secure on-line databases; and (e) assisting with human resource development required for establishing the national information highway.

Pilot information networks have been launched covering culture, tourism, health care, environment, education, public services and local government administration. Content in the form of on-line databases, human resource development and creating and supporting user groups were carried out. Beneficiaries have been investors, developers, health care professionals, environmentalists, government officials and the general public. HealthNet² is considered among the most successful efforts thus far, in part because of the quality of the voluntary support

Internet service providers also started to add content. As described in more detail below, some ISPs began to differentiate themselves by their target clients, and developed information materials of interest to their market segments (such as financial markets). Leading magazine and newspapers also began to offer virtual editions. Some leading non profit organizations, ranging from business associations to economic research institutions, also developed content for Egypt.

¹[Http://www.idsc.gov.eg/](http://www.idsc.gov.eg/)

²[Http://health.egnet.net/](http://health.egnet.net/)

Professional associations, such as the Internet Society of Egypt, have naturally developed rich web sites. The Government of Egypt has also begun, albeit rather slowly, to provide information on the Internet.

IV. THE INTERNET IN EGYPT

TODAY. The explosion in the number of companies rushing in to offer Internet services is a reflection of the market's judgement as to the demand for Internet services in Egypt today. Competition is intense at the retail level. This has resulted in a downward trend in prices to Egyptian Internet users, but they are still paying a great deal more than their international counterparts. Egyptian Internet users also face frustrations with the quality of Internet services, a reflection of the limitations in the telecommunications infrastructure. Higher prices and poor quality of services reflect the monopolistic position that Telecom Egypt holds over domestic and international telecommunications services. Below is a description of the ISP industry in Egypt today, as well as the general content providers.

A. Egypt's Internet Network Today. Telecom Egypt, in cooperation with IDSC/RITSEC, have installed a set of digital multiplexors as the first digital backbone in Egypt for Internet services. The International connectivity to and from Egypt is provided via satellite links using Intelsat and fiber connectivity using SEMWE-2 to Europe and via TAD-12 to the U.S. Rural areas are now provided with data communication services via VSAT terminals with hub-based and hubless communications. As noted earlier, Zaknet provides AsiaSat II satellite downloading capabilities and the recently launched NileSat will add additional satellite data transmission services for Egypt.

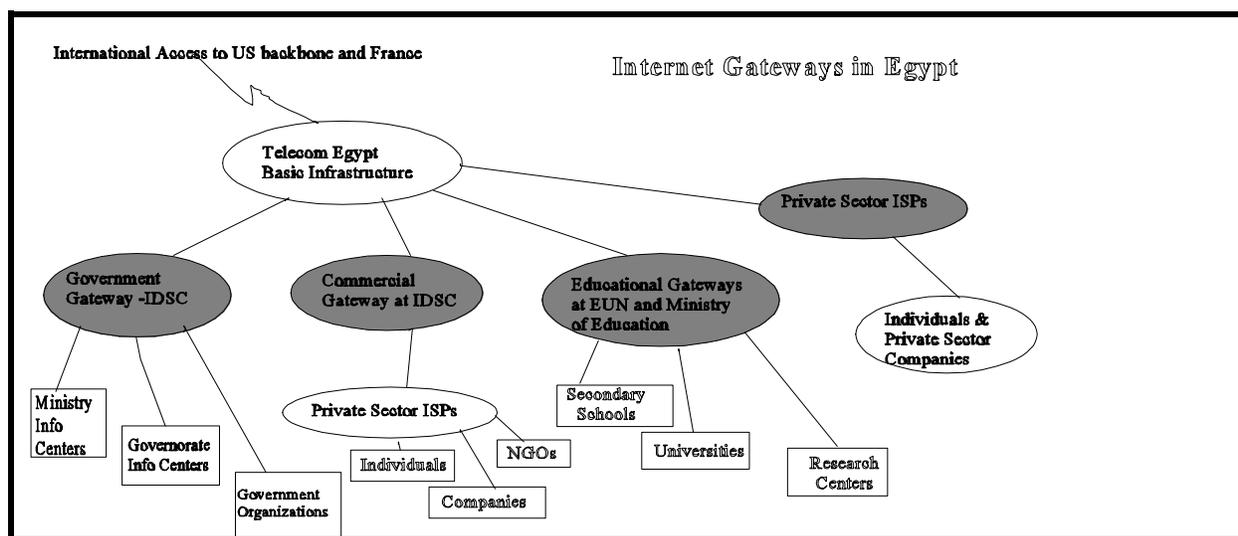
There are several Internet gateways in Egypt. The first two gateways are with IDSC/RITSEC, with seven megabyte links to the U.S. backbone: One link is provided via Intelsat with MCI and the other via fiber to Sprint/Global One. These two gateways serve the public sector and also provide Internet connectivity for the great majority of ISPs in Egypt, which primarily serve the private sector and households. Other gateways serve the academic establishment. One at the Egyptian Universities Network serves all twelve Egyptian universities and research centers connected to ENSTINET. It also provides connectivity for plans to wire hundreds of secondary schools to the Internet. This gateway has a fiber link to France. Along with a gateway at the

Egypt's HealthNet

Of the various efforts to create content on the Internet, HealthNet is considered among the most successful. As a pilot information network, it facilitates communication and information exchange among physicians, health care providers and patients in Egypt. The main accomplishments to date are: (a) establishing a web site containing online databases on physicians, drugs, medical and pharmaceutical companies, and hospitals, as well as home pages of health care providers and medical societies; (b) connecting more than 60 hospitals and providing Internet access to more than 400 physicians and health care providers, © conducting short courses and workshops to train physicians and raise awareness in the medical community; (d) establishing an electronic mailing list for physicians and health care professionals to facilitate interaction; and (e) establishing four national medical information centers.

American University of Cairo, there is approximately 2 megabytes of capacity within educational institutions.

Additional gateways are being established for private sector Internet service providers. Internet Egypt has a link to France with fiber optics. Gega Net, a joint venture of Telecom Egypt and Siemens Germany, has two direct and independent links to the international Internet back bone. Together, they presently offer 1.5 megabytes of bandwidth for customers. Other ISPs are considering breaking away from their IDSC/RITSEC connection and establishing their own gateways. As noted above, satellite-based downloading capabilities are being overlaid on this Internet backbone in Egypt which effectively increase the bandwidth capability of Egypt. By some estimates, reliance on satellite downloading has effectively added three megabytes of capacity to Egypt's Internet backbone. The following table depicts Egypt's Internet gateways.



B. Internet Service Providers. There are now more than forty Internet service providers in Egypt. Service is concentrated in Cairo, but there are seven Internet service providers in Alexandria, and more limited service is also offered in the Suez Canal, Red Sea and Sinai regions. All of these firms are just a few months to a few years old. Many are small operations, but some have large corporations behind them. Egyptian ISPs have been competing primarily on the basis of price, with end-user costs diminishing as competition heats up. Some ISPs have targeted specific markets, such as financial markets or offering corporate solutions. Some have opened Internet cafes in conjunction with their Internet services. Most also offer related services, described below.

Thirty-six of the forty operating Internet service providers obtain bandwidth through RITSEC. RITSEC itself handles approximately 70% of the Internet traffic in Egypt. The Egyptian University Network, and two private ISPs (Giganet and Internet Egypt) have their own private

gateways outside of Egypt. The great majority of ISPs now offer the Zaknet service to their customers, but often for a premium.

Internet Users can be divided into three categories: academic, government and commercial. According to one very knowledgeable source at RITSEC, fifty percent of users are from the business community, thirty percent are academic and twenty percent are from the public sector. However, it must be cautioned that it is difficult to precisely determine the usage among these groups. Several interviewed ISPs noted that they don't know usage among clients because many apply for Internet services under company names, but ISP managers suspect some are doing so to obtain tax deductions, and are not a reflection for how the service is actually used. Sixteen of Egypt's 26 Governorates have at least some limited Internet usage. In any case, the following table illustrates how three Internet service providers characterize their clients.

Cairo ISP	Alexandria ISP	Port Said (including Ismailia and Suez) ISP
business - 40% non-profits/intl organs -30% household/students - 30%	business - 40% academic - 30% households - 30%	business - 50% households/students: - 20% medical field - 10% universities - 3% government - 2% others - 5%

C. Services Provided. Internet service providers in Egypt typically offer an array of services. A review of the services offered by 31 ISPs³ found that (a) all 31 offered E-mail; (b) 28 offered Telnet and FTP; (c) 30 offered WWW access; (d) 24 offered hosting of home pages; (e) 8 offered training; and (f) 16 offered services such as web design, and hosting news groups. Another recent review⁴ examined bandwidth offered (or at least claimed) by 24 of Egypt's top Internet service providers and found that they had bandwidths as follows: 4 offering 64 kps; 7 offering 128 kps; 3 offering 256 kps; 5 offering 512 kps, and 2 offering 768 kps. Recommended modem speeds ranged from 28.8, 33.6 and 56 kps.

In Cairo, RITSEC directly provides Internet services to most government organizations; however, the market was recently opened up to private providers. Outside of Cairo, ISPs have always had the opportunity to serve the public sector.

Most Internet service providers offer the user either a dedicated leased line or a dial-up service.

³ "Internet Access in Egypt", <http://pharos.bu.edu/Egypt/access.html>

⁴"ISPs at a Glance" by Ehab Heikal PC World Egypt, July/August 1998

Eighty percent have signed up with Zaknet and thus offer their users the possibility of downloading files via AsiaSat II, but for a premium in costs.

D. Costs and Quality of Service. A variety of packages are available to Internet users in Egypt. Unlimited flat fee use for a dial-up account can run from LE 85-140 per month. The amount depends on (a) the length of contract entered into (naturally the longer the commitment, the lower the monthly charge); and (b) the quality of service provided. At the higher end, access to ZakNet satellite downloading services are available, which normally results in a 30-50% premium. Limited use plans (hours per month) reduce the monthly charge, and even lower cost plans are available with a commitment to utilize the Internet during non-peak hours. Some Internet service providers require an up-front payment to subscribe to their service, a fee which can be waived with a long-term contract.

Internet service providers also provide corporate dial-up solutions. One established Internet service provider in Cairo, Soficom, for example, offers access for 10 dial-up users, installation and training, 500 KB of world wide web storage, Microsoft Internet Explorer licensed copy for each user, 1,000 hours of Internet access, and a domain name registration. The cost for this service is LE 5,000, with a 60% advanced payment and installments on the remaining use. Installation of this system for five users would be LE 3,000.

Leased line connections are also available. For example, an established Internet service provider in Cairo, StarNet, offers a multimachine, 24-hour connection for LE 13,260 per year. The price is reduced to 11,050 for a single machine use of a dedicated leased line. A second Internet service provider, IEC, offers a leased line for one machine at a time, five machines at a time, or up to eighteen machines at a time at rates of LE 10,900, LE 13,000, or LE 15, 500 per year. Each additional IP or E-mail account for a year adds an additional LE 200 and LE 300 respectively.

Aside from the charge for bandwidth, the Egyptian Internet user also bears the cost of telephone line usage. Unlike pricing in the United States, Internet users don't have a fixed monthly charge for Internet use, but rather pay by the hour. As noted above, there are also waiting times of almost 6 years for a new line, and there is also an expensive up-front payment to obtain a new phone line (LE 3,000), again another charge not borne by American Internet users.

The major cost for an Internet service provider is the cost of bandwidth and associated expenses. This amounts to approximately one-half of their overall expenses; the remaining covering hardware, software, staff, office space, and marketing. The following table estimates the costs they face for bandwidth.

Speed	MCI	Telecom Egypt	Total	RITSEC*
32K	-	-	-	\$2,350
48K	-	-	-	\$2,820

64K	\$3,000	\$6,000	\$9,000	\$3,670
128K	-	\$9,000	-	\$5,630
256K	\$7,400	\$13,500	\$20,900	\$9,800
384K	-	-	-	\$12,250
512K	\$14,700	\$20,000	\$34,700	\$15,930
768K	-	-	-	\$20,833
1024K	-	\$30,000		\$26,960
1544K (T1)	\$29,300	\$40,000	\$69,300	-
2048K (E1)	\$38,000	\$50,000	\$88,000	-

* RITSEC does not provide dedicated bandwidth and is currently oversubscribed. MCI and Telecom Egypt links are dedicated.

The table illustrates the dilemma of an Egyptian ISP: Significantly cheaper costs if they obtain bandwidth (albeit oversubscribed) through RITSEC versus higher costs, but dedicated lines via Telecom Egypt. As note above, most opt to work through RITSEC. There are many other costs borne by the ISP, which are then passed on to the consumer. These costs are also higher than international prices, and include such items as national fees for digital circuits, installation fees, and leasing terminal unit fees.

Based on interviews with 14 Internet service providers and other knowledgeable sources, ISPs are ultimately paying approximately 2.5 times what their international counterpart ISPs are paying for bandwidth and related costs. Given that these amount to approximately half of their full costs, if there were a more internationally competitive price structure, then consumers might be paying approximately 30% less for Internet services. Most ISPs believe that this would result in a much larger market, particularly for students.

Apparently, the Government of Egypt is exploring the possibility of a new asymmetric service that they hope will significantly reduce Internet prices for larger Internet service providers. This development bears watching to see if it meets these high expectations.

E. Content Providers. The Internet is more than bandwidth, it is also content. Beyond the wealth of information and services available internationally, there is a nascent move to add information related to Egypt, to make the Internet more relevant to Egyptians. While there are many examples, they can be characterized as (1) efforts by the Government of Egypt to develop awareness and utilization of the Internet; (2) efforts by non government organizations to utilize the Internet to disseminate important economic information; (3) applications by the private sector as information providers; and (4) commercial efforts to market and provide electronic commerce over the Internet. Examples follow below to illustrate the range of content, but no attempt is

made to be exhaustive. (USAID and other donors have also helped to provide relevant content, but these are discussed below.)

1. The Government of Egypt. As noted earlier, IDSC/RITSEC has championed Internet use with its Egyptian Information Highway Project since 1995. Their most successful effort to date, HealthNet, was described above. TourismNet⁵, their first endeavor, seeks to promote Egypt by offering a directory of tourism services in Egypt as well as a walk through Egypt's history and treasures. CultureNet⁶ seeks to promote awareness of Egypt's culture and heritage, and act as a central resource for Egypt's cultural community; connecting to major Egyptian museums, libraries, and cultural institutions. GovernoratesNet⁷ seeks to encourage and support socio-economic development in Egypt's Governorates and to act as a main information resource on Egypt, with basic statistical information on Egypt's administrative divisions. GovernoratesNet also seeks to promote both tourism and investment in the Governorates. For example, the profile of Alexandria contains geographic information, population, agricultural activities, industrial activities, tourism, public services, infrastructure and labor force and unemployment. EnviroNet⁸, which is considered least successful, has had multiple objectives: To improve management, monitoring, and implementation of environmental projects, to link national and regional databases in all major areas related to the environment (including water, waste, air, land, natural resources, and natural heritage); to assist and support environmental decision-making; to disseminate environment-related indicators; and to facilitate communications between environmentalists. The most recent addition is the Egyptian Libraries Network which contains a list to the 57 automated libraries of Egypt (including USAID's) with almost 300,000 bibliographic records available to be searched; records are in Arabic, English and French languages. .

How successful has the Egyptian Information Highway been?

Tourism gets 30,000 hits per day.
Culture/Tourism get 86% of all hits.
HealthNet gets 14% of all hits.
Governorates and EnvironmentNet receive minimal interest.
54% browsers come from Egypt.

Egypt Government On-Line⁹ is an attempt to provide online information with respect to

⁵[Http://163.121.19.101/index1f.htm](http://163.121.19.101/index1f.htm)

⁶[Http://www.idsc.gov.eg/culture/](http://www.idsc.gov.eg/culture/)

⁷[Http://www.idsc.gov.eg/govern/](http://www.idsc.gov.eg/govern/)

⁸[Http://www.ritsec.com.eg/ritsec/env/highway](http://www.ritsec.com.eg/ritsec/env/highway)

⁹[Http://www.misrnet.idsc.gov.eg/home/wel.htm](http://www.misrnet.idsc.gov.eg/home/wel.htm)

government services, profiles and news. Thus far the government profile includes the Ministry of Petroleum¹⁰, Ministry of Health and Population¹¹, Ministry of Industry and Mineral Wealth¹², Ministry of Public Works and Water Resources¹³, and People's Assembly and Shura Council Affairs¹⁴. The formats for the four Ministries are fairly uniform, and include (a) About - a brief description of the organization; (b) Mission -a set of objectives of each ministry; © Organization chart; (d) Indicators - a set of key measurements of their responsibilities; (e) Achievements - some success stories; and (f) Key Persons - leaders of the organization and/or contact points. These pages are available in English and Arabic, and provide a minimal level of information, that hopefully will be augmented in the future. In contrast, the legislative home page is much more comprehensive and informative. For example, the Assembly home page includes a historical background of Parliament and democracy in Egypt, general provisions of the constitution, the constitutional term of the Assembly, the Assembly function, main organs of the People's Assembly, Main Organs of the People's Assembly, and a description of the Speaker and General Secretariat.

The Egyptian Presidency¹⁵ is also on-line. It includes a profile of the President, a brief profile of Egypt, a news desk with updates of the president's meetings, news conferences and national/international activities which are archived. For example, there is a one-page description of the Mubarak-Clinton News Conference of March, 1997.

The Ministry of Foreign Affairs¹⁶ has one of the more comprehensive and informative web sites of government agencies. It includes a comprehensive description of the Ministry's headquarters and searchable database of Egyptian Embassies abroad, foreign missions in Egypt, and consular procedures and services. The web site also includes treaties, foreign policy positions and documents, public and press statements, and related links.

¹⁰[Http://www.misrnet.idsc.gov.eg/petrol/epetrol.htm](http://www.misrnet.idsc.gov.eg/petrol/epetrol.htm)

¹¹[Http://www.misrnet.idsc.gov.eg/health/ehealth.htm](http://www.misrnet.idsc.gov.eg/health/ehealth.htm)

¹²[Http://www.misrnet.idsc.gov.eg/industry/eindustr.htm](http://www.misrnet.idsc.gov.eg/industry/eindustr.htm)

¹³[Http://www.misrnet.idsc.gov.eg/water/ehome.htm](http://www.misrnet.idsc.gov.eg/water/ehome.htm)

¹⁴[Http://www.parliament.gov.eg/](http://www.parliament.gov.eg/)

¹⁵[Http://www.presidency.gov.eg/](http://www.presidency.gov.eg/)

¹⁶ [Http://www.mfa.gov.eg/](http://www.mfa.gov.eg/)

The Government of Egypt also has economic information on the Internet. Egypt's State Information Service¹⁷, for example, has a fair amount of information on investing in Egypt, and on-line Year Books (which are archived) with economic data and information on subjects related to economic growth (e.g. economic systems, foreign trade, agriculture and irrigation, industry, energy, transportation, tourism, and giant projects). The State Information Service also publishes a monthly journal on the Internet: Egypt OnLine¹⁸, with current events, including economic news. The State Information Service web page has additional information, such as "Egypt and the 21st Century" which provides a vision statement for Egypt, and links to respected international articles and reports providing recognition for Egypt's economic performance and potential, such as from Merrill Lynch, Standard and Poors, Morgan Guaranty Trust Company, The Economist and Wall Street Journal.

IDSC publishes its monthly economic bulletin on line¹⁹. This bulletin includes a group of selected indicators that reflect the performance of the Egyptian economy and state of the global economy. It includes macroeconomic indicators, sectoral indicators, as well as global comparative indicators with industrial countries. The Central Agency for Public Mobilization and Statistics (CAPMAS) is a central statistical agency for Egypt and provides population, foreign trade and economic census databases on-line, but for a fee. Information Technology Solutions (ITS), an affiliate of IDSC, is an information technology

Interesting Links on Egypt (from the IDSC web page).

General Information

- The Egyptian Presidency
- Egypt's Information Highway
- Egypt's Armed Forces
- Egyptian Abroad Services
- Ministry of Foreign Affairs
- Emigration Sector's Official Home Page
- Egypt information on City Net.
- Egypt information - (Arab.net)
- Index of Egyptian Information on Internet - Moutafa M. Ghanem
- Egyptology Resources
- Cairo Economic Conference for Middle East and North Africa (MENA CAIRO 96)

Trade and Business

- Technology Development Program- ITS
- Investing in Egypt - ITS
- Privatization Egypt
- Made in Egypt (IDSC)

Science and Technology

- Egyptian National STI Network
- American University of Cairo Official Pages
- AUC Center for Academic Computing Page
- AUC Web
- Egypt Schools - Worldwide Classroom
- Cairo University

Other Sites

- RITSEC homepage
- ITS-Egypt
- The curse of the pharaoh's
- Alaa Ashmawy's Home Page
- Goeth-Institute
- The Egyptian Gazette
- Links to Egypt
- Egypt Interactive Home Page
- AmCham Egypt-US
- Egypt - (Dartmouth College)
- Guardian's Egypt Homepage
- The Arabian Horse World-Wide Guide
- Soccer News from Egypt -(Amr Haggag

¹⁷[Http://www.sis.gov.eg/](http://www.sis.gov.eg/)

¹⁸[Http://www.sis.gov.eg/online/html/index.htm](http://www.sis.gov.eg/online/html/index.htm)

¹⁹[Http://www.sis.gov.eg/online/html/index.htm](http://www.sis.gov.eg/online/html/index.htm)

solutions provider. ITS developed and maintains a site, Investing in Egypt²⁰ with information on establishing a business presence in Egypt, banking and finance, major legislation, a description of Egypt's business climate, an economic profile of Egypt, projects open to investment by sector, Egypt's Business Center with a searchable database of Egyptian companies, and a description of Egypt's Technology Development Program.

The Government of Egypt has also sponsored scientific and technical information on the Internet. ENSTINET²¹ is a searchable database of scientific and technical information maintained by the Ministry of State for Scientific Research. This Egyptian National STI NETWORK was established in the 1980s to serve Egypt's scientific and technical community. It consists of seven sectors (agriculture, energy, industry, medical, reconstruction, science and technology and social) and seven regional centers (Universities of Alexandria, Assiut, Mansoura, Menia, Menofia, Suez Canal and Tanta) and provides online database searching, CD-ROM databases, local database searching, and network services such as Internet E-mail and UseNet News. The Central Laboratory for Agricultural Expert Systems²² provides information and papers on various expert systems such as growing cucumbers, oranges, and tomatoes. The Ministry of Education's Technology Development Center²³ has a brief description of its educational technology programs and multimedia labs project on the world wide web. (More importantly, the Ministry of Education has an ambitious program to connect 2,000 Egyptian secondary schools to the Internet, and Egypt is participating in the Globe Schools program with the United States.)

On the social side, the Government of Egypt's Social Fund for Development²⁴ has a comprehensive web presence which describes the history, administration and success of the program, including its core activities (public works, community development, enterprise development, employment and retraining, and institutional development). The Social Fund has a plan to build on this web site, by (a) establishing an exchange between their 25 regional offices and headquarters, and (b) creating a CD-Rom product that will be placed on the Internet and permit analyses, such as how many activities and types are implemented in specific governorates.

2. Non Profit Organizations. A number of non profit organizations have begun to utilize the Internet. These organizations tend to be business associations, professional organizations, research institutions, and international institutions with offices in Egypt .

The American Chamber of Commerce in Egypt²⁵ has a very comprehensive home page. It

²⁰[Http://www.163.121.10.41/invest/](http://www.163.121.10.41/invest/)

²¹[Http://www.sti.sci.eg/](http://www.sti.sci.eg/)

²²[Http://www.claes.sci.eg/](http://www.claes.sci.eg/)

²³[Http://www.frcu.eun.eg/www/homepage/moe/newsite1.html](http://www.frcu.eun.eg/www/homepage/moe/newsite1.html)

²⁴[Http://www.sfdegypt.org](http://www.sfdegypt.org)

²⁵[Http://www.amcham.org.eg](http://www.amcham.org.eg)

provides general information, business opportunities, business services and activities. These pages provide a history of the Chamber, a description of its objectives, contact information for its leadership and staff (many of whom can be reached by E-mail), a searchable database of Amcham's 850 members, a summary of business reports and analysis which are available, and a web edition of its Business Monthly journal, which is archived from September 1996. There are also economic profiles of key sectors of the Egyptian economy, and a brief description of BizLink, a USAID-supported initiative, which is described below.

The Egyptian Businessmen's Association²⁶ provides a description of its organization, its objectives, links with sixteen Joint Councils that promote commerce and investment with various foreign countries (e.g. the Egyptian-Belgium Business Council), a description of its action committees, information on Egypt's investment laws and privatization activities, and schedules of events and training programs.

The Internet Society of Egypt²⁷, founded in October of 1996 is a non-profit organization of professional individuals and organizations dedicated to promoting, managing and facilitating the use of the Internet in Egypt. The home page describes its vision ("to lead and support the Egyptian community in making best use of the Internet contributing to Egypt's socio-economic development and growth"), mission and objectives, by-laws, code of ethics, committee structure and tasks, and board of directors. The web presence also has useful information on the evolution, structure, nature and management of the Internet in Egypt, lists of Internet service providers, and links to the more prominent of Egypt's world wide web pages.

The Egyptian Center for Economic Studies²⁸ has a rich web presence in which this independent economic research organization describes its programs and activities, lists its research reports along with a description of the main findings, and publishes on-line a series of "Policy Viewpoints" to contribute to the discussion of ideas and policy options for enhancing economic development in Egypt. For example, the visitor to the ECES website can read and download a recent Policy Viewpoint "Towards More Efficient Telecommunications Services in Egypt".

The Economic Research Forum²⁹ is a nongovernmental organization, whose mission is to provide an institutional mechanism to initiate and fund policy-relevant research, to disseminate research results, and to function as a resource base for researchers. It is the first research networking institution of its kind in the region. The web page describes the Forum's organization, structure, research agenda, activities to date, membership in the network and contact information. The Forum's web page has searchable databases with working papers, conference proceedings, and other publications.

²⁶[Http://www.eba.org.eg/wsdocs/right.htm](http://www.eba.org.eg/wsdocs/right.htm)

²⁷[Http://www.ise.org.eg/](http://www.ise.org.eg/)

²⁸[Http://www.eces.org.eg](http://www.eces.org.eg)

²⁹[Http://www.erf.org.eg/](http://www.erf.org.eg/)

American-Mideast Educational and Training Services, or Amideast³⁰, a nonprofit organization promoting education assistance programs between America and the Middle East and North Africa has a home page. It contains a description of Amideast programs, activities, contact points throughout the region, and journal -- The Advising Quarterly for Professionals in International Education. The Binational Fulbright Commission in Egypt³¹ has a home page which describes its history and mission, provides contact points (who can all be reached by E-mail), and descriptions of various programs, activities and events. The American University in Cairo³² has a very extensive Internet presence, called Saqqarah Web, with comprehensive information on the University, education programs offered, student services, notices and newsletters, library linkages, and administrative matters. The American Research Center in Egypt³³ is a professional society of specialists on Egypt of all periods and is committed to the conservation of Egyptian monuments. The Center's web site describes its journals, newsletters and publications, and has links to related organizations.

3. Information providers. Some entrepreneurial information providers are starting to develop and market information on the Internet, primarily for an Egyptian audience, and for a fee. Data Bank Company has been given an exclusive license to provide Egypt's legislation on the Internet. Dubbed as DBC Tashriaat³⁴, the service costs between LE 2000 to LE 5000 for use ranging from 240 hours/year to 1200 hours/year, and is clearly not inexpensive. The service provides and updates daily the laws starting from 1828 to the present. The database, in Arabic, is searchable by decree, subject, expression or word, date, specific law condition, or signee or issuer.

A second information provider is Misr Information Services and Trading (MIST), which is also an Internet service provider. MIST produces online information with respect to foreign exchange fluctuations³⁵ and stock prices³⁶. Moneyvan allows monitoring of real time spot trading in the money markets. It is connected with the Central Bank so they can monitor what is happening with the FX rate at any time throughout Egypt. Users are foreign exchange dealers and large companies that do international trading. Egyptianstocks tracks stocks and mutual funds. The users are small investors and brokers who want to track the market from their homes. This web site contains a description of Egypt's capital markets and a fairly comprehensive list of Egyptian stock brokers with hyperlinks to these brokerage houses. This service has over 650 subscribers, including all of Cairo's banks, portfolio managers, 110 stockbrokers in Cairo and Alexandria, and

³⁰[Http://www.amideast.org/aemain.htm](http://www.amideast.org/aemain.htm)

³¹[Http://www.frcu.eun.eg/www/organizations/fulbrightegypt/linkpage.htm](http://www.frcu.eun.eg/www/organizations/fulbrightegypt/linkpage.htm)

³²[Http://www.aucegypt.edu/](http://www.aucegypt.edu/)

³³[Http://www.arce.org/home.html](http://www.arce.org/home.html)

³⁴[Http://wwwdbc.com.eg](http://wwwdbc.com.eg)

³⁵[Http://www.moneyvan.com](http://www.moneyvan.com)

³⁶[Http://www.egyptianstocks.com](http://www.egyptianstocks.com)

large investors. Egyptian investors can send orders to their broker and have him/her buy and sell, again on-line. Currently 40 Egyptian stockbrokers are certified by the Capital Market Authority to trade online. The cost for the money and stock tracking services are \$20/month each.

A third information provider is Kompass. Kompass has a comprehensive database of company information for 22,000 Egyptian firms. This database has traditionally been sold in hard copy (for LE 400) and on CD-ROM (for LE 900). They have recently offered an Internet edition, which is priced at LE 680. Browsers can find the contacts of each company listed for free, but need to pay for the actual company information.

Egyptian International Trade Point³⁷ is Egypt's electronic linkage with UNCTAD's Global Trade Points Network, composed of more than 116 trade points located in 80 countries. This web site, managed by the Ministry of Trade and Supply, has three major objectives: (1) listing of trade opportunities for Egyptian businesses; (2) an information clearinghouse to get international customs, banking, packaging and other information helpful to business in international trading; and (3) an Egyptian database of exporters, importers, factories, and other businesses. In fact, the web site is rather sparse, when compared with other international trade points. Very little information is provided for international businesses wishing to trade with Egypt, and only three companies are listed. However, according to the Egyptian trade points manager, 4,000 small and medium-sized Egyptian companies have registered with Trade Points, and between 5-15% of the registered enterprises have claimed that business flowed to them as a result of this service.

UNCTAD Trade Point Leads

To give some perspective on the opportunities, between January-June, 1998, there were a total of 8,400 UNCTAD trade opportunities; 3,900 of which were suitable for Egyptian exports and 4,200 for Egyptian imports, and 120 suitable for Egyptian investments. Of these 3,900 export opportunities, 590 were exports into the United States and 470 into the Middle East.

Egyptian newspapers have also developed Internet-based editions. Presently there are number of Egyptian papers with Arabic editions on the Internet. Among these are the prominent Al-Ahram Newspaper, both daily and weekly editions; Al-Gomhoria Daily Newspaper, and Al-Messa Daily Newspaper³⁸. Periodicals on the Internet include Business Today³⁹.

In an exciting new development, the University of Illinois will be offering an on-line masters' degree program in mechanical engineering to Egyptian students beginning in the new year. IDSC

³⁷[Http://wwwtradepoint.cs.tut.fi/untpdc/incubator/egy/tpcai/welcome.html](http://wwwtradepoint.cs.tut.fi/untpdc/incubator/egy/tpcai/welcome.html)

³⁸[Http://www.ahram.org.eg](http://www.ahram.org.eg); <http://www.ahram.org.eg/weekly>; <http://www.tahrir.net/Al-Gomhuria/index.html>; <http://www.tahrir.net/Al-Messa/index.html>

³⁹[Http://www.arabia.com/Business Today/](http://www.arabia.com/Business Today/)

and RITSEC are also exploring opportunities to develop distance learning opportunities in the Middle East region with participating universities. These are first initiatives of the RITSEC Global Campus Initiative which seeks to formulate a global learning environment through the integration of the evolving communications and electronic publishing technologies with existing education infrastructure.

4. Commerce over the Internet. Among the community of Internet services and information providers in Egypt, there is a clear interest in applying the Internet to commerce. CAINET 98, the third annual Internet conference in Egypt, focused on the possibilities and challenges of electronic commerce in Egypt. A conference in Cairo during the last week in September also focused on international, regional, and national dimensions of electronic commerce. The large ABC supermarket chain⁴⁰ has opened itself for web-based electronic commerce for less than a year, allowing customers to order groceries over the Internet. ABC Supermarkets had the first electronic web site in Egypt and the region, with its entire focus being local grocery shopping.

While ABC Supermarkets has attempted to serve customers over the Internet, most observers on the subject in Egypt see greater potential for electronic commerce as business-to-business opportunities, as opposed to business-to-customers. Thus, several Internet service providers have targeted Egypt's banking and capital markets area as most deserving of ecommerce applications in the years ahead. One Egyptian bank plans to initiate an online credit card approval system that will facilitate safe credit card transactions on the computer, next year. Multinationals have utilized the Internet, and other computer networks to improve their own internal operations, such as Coca Cola Egypt planning an ambitious wide area computer network to link production, distribution and management offices throughout Cairo.

F. Putting the Internet in Egypt in Perspective. While the Internet has clearly grown in the past four years in Egypt, it would be useful to place Egypt in the context of the middle east region and the rest of the world.⁴¹ Egypt has approximately 17,000 host computers in Egypt, by far more than the rest of the Arab nations combined. However, on a host computers/capita basis, Egypt is in the bottom 12.5-50% segment of the world in terms of computer host density when compared with population. Although Internet users in Egypt double once every 10-12 months, which is somewhat above the region's average, this is only 50-60% of the global rate which is doubling every six months. The ratio of Internet subscribers to population is 1: 1,500 in Egypt and 1:5 in the United States.

⁴⁰[Http://www.abcsupermarkets.com](http://www.abcsupermarkets.com)

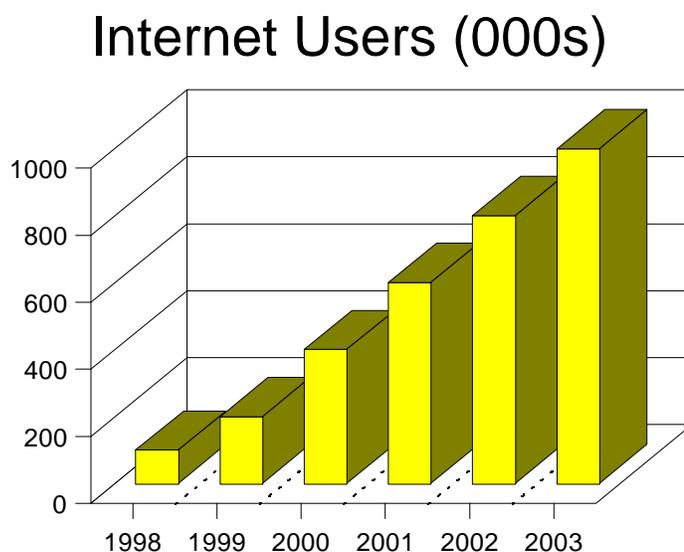
⁴¹Much of the statistics are taken from a presentation entitled "An Internet User Profile in the Middle East" for Comdex Egypt '98, 24 May 1998 by InTouch Communication Services, drawing on data from the International Telecommunications Union and The Internet Society.

V. OPPORTUNITIES AND CHALLENGES TO THE INTERNET AS AN EFFECTIVE DEVELOPMENT TOOL

A. Forecasts for Internet Growth in the Future. How large is the potential market for Internet services in Egypt? It is hard to forecast, but we do know some limiting factors. Illiteracy constrains perhaps half of Egypt's population today. English language facility in Egypt might be limited to ten percent of the population (although as more Arabic content is added, this limitation may become less decisive). Certainly the high costs for computers, software, and Internet service limits use (beyond organizational access) to approximately 20% of Egypt's population. Taken all together, then ultimate Internet use in the next ten years might be limited to say 15% of Egypt's population, or approximately 9 million users.

IDSC forecasts that Internet users in Egypt will increase from 100,000 today to approximately 250,000 by the year 2000. They hope to have 1,000,000 Internet users in five years. USAID has also made predictions. In the Second Memorandum of Understanding for USAID's Telecommunications Sector Support Project, projections for Internet subscribers are as follows: 1997: 20,000; 1998: 92,000; 1999: 164,000; 2000: 236,000; 2001: 308,000; and 2002: 400,000. Assuming somewhere between 2 and 3 users per subscription, USAID is therefore predicting approximately 1 million Internet users in Egypt by the year

2002. A third way of predicting Internet growth in Egypt is to look at personal computer sales in Egypt. In 1997, 100,000 personal computers were sold in Egypt and the current rate of growth is 30% annually. Assuming three quarters of these new computers find themselves wired to the Internet and some additional personal computers already in country get wired, then it should be possible to reach 1 million Internet users by the year 2003. This author believes that the most conservative estimate of one million Internet users by the year 2003 would be the safest estimate. The accompanying chart depicts one growth scenario.



B. Potential Uses of the Internet in Egypt. The potential uses of the Internet in Egypt are drawn from a global study conducted by this author for USAID's Center for Economic Growth, in Washington during 1997/98. It studied how institutions successfully utilize the Internet around the world to strengthen economic policy programs. Since this study is broader in the sense that it encompasses utilization of the Internet for private sector led economic growth, these potential uses also include business facilitation and transactions.

1. Economic Research and Analysis. Collection of current and reliable information is essential for sound economic policy analysis and formulation. The Internet has a wealth of information and analytical tools for sound economic research and analysis, an ability for professionals to dialogue and conduct joint research, and emerging technologies which allow for interactive database management. For example, USAID helps the Government of Russia collect and disseminate raw economic data on the Internet, which permits researchers in Siberia to download both data and statistical packages, to draw their own conclusions regarding the state of the Russian economy. Michigan State University instructs agricultural economics students how to research relevant information on the Internet, such as worldwide weather patterns, international agricultural trade statistics, commodity prices, and particular markets, such as cotton in Egypt or sugar in the Philippines. Business and commercial lawyers use the Internet to carry out legal research, and compare commercial laws across countries. These applications of the Internet have relevance to Egyptian policy analysts; both from the perspective of researching worldwide policies and conditions, as well as understanding local conditions -- if economic data is published on the Internet.

2. Public Transparency and Advocacy. Transparency is important for an informed public and advocacy is important to lobby for change. Governments use the Internet to publish policies, laws and regulations so that they are clear for both citizens and concerned international partners. Non-governmental organizations use the Internet to push for policy reforms and change. As an example of public transparency, the Government of Kazakhstan utilized the Internet to clarify its mass privatization program. According to the Financial Times of London "The web site had changed the mind set of entire constituencies within government, encouraging an open, global approach to business and creating a resource that allows for easy international networking." As an example of public advocacy, the winner of the Nobel Prize for Peace this year was an American who utilized the Internet to forge an international agreement banning land mines. The winner claims that the Internet was instrumental in working with international humanitarian NGOs to lobby for this new treaty. According to foreign policy analysts, this event was a first example of how the Internet is transforming the conduct of foreign policy. These applications of the Internet are relevant to Egypt; permitting the Government to clarify policies, and permitting NGOs to work together towards change -- if the Government of Egypt desires such transparency and permits nongovernmental groups to work together.

3. Professional Networking. Economic policy analysts and program managers need to exchange news and views, collaborate on joint projects, and stay current in this dynamic global economy. The Internet by its very nature is ideally suited for professional networking. Virtual conferences and Internet newsgroups offer other opportunities for networking but work best when structured. For example, the head of economic research for the Central Bank in Sri Lanka uses the Internet to collaborate with heads of economic research for the other South Asian Central Banks, thereby permitting him to make more intelligent monetary policy recommendations to his own government. As another example, the World Bank held a virtual conference, which they call a "think tank" on the subject of the South Pacific region and the information age. The Bank published, online, a number of relevant papers, and then held a two-month discussion with

the authors. Participants in this virtual conference included librarians from South Pacific islands who never would have had the opportunity to offer their viewpoints. The end result was a greater understanding of the issue for policy makers. Professional networking makes sense for Egypt also: It can aid policy analysts to work more collaboratively with colleagues in the region, in the United States, and elsewhere. It can open up discussions to get wider perspectives on key policy matters.

4. Institutional Networking. Institutions need to remain current on global economic conditions and thinking as do individuals. Economic policy institutions, be they business associations, think-tanks or universities, can grow stronger by having international partnerships. Institutional networking works best when organizations have a common agenda and mutual interest. In such circumstances, the Internet is a great tool. For example, the International Center for Economic Growth in Chile is creating a global virtual network of free market-oriented economic research institutions. Egyptian research institutions can benefit from joining by having access to research findings, international experience, and viewpoints from leading economic researchers from around the world. Institutional networking also helps to sustain relationships when foreign assistance ends. The costs to maintaining institutional relationships is substantially reduced when a virtual work space is created. Egyptian institutions can have a much wider and longer lasting relationship with international organizations with similar interests using the Internet.

5. Distance Technical Assistance. Economic policy reform programs often require expensive, short-term technical assistance for very defined periods of time. The Internet can be a tool to deliver these services; on-line and on-time. The Internet can also provide greater access to leading luminaries who might otherwise decline assignments which require several weeks of undivided attention. Laying the groundwork and having local support may be important to ensuring the effectiveness of this approach. For example, there is a American nonprofit organization that has a virtual network of leading experts on tax and investment policies for natural mineral extraction. These experts provide advice over the Internet, and local nationals work that advice through the local policy making process. As another example, USAID is entering into an agreement with the U.S. Securities and Exchange Commission which will permit Egyptian Capital Market Authority officials to tap into the expertise of the SEC, via the computer. There are many other examples of ways in which Egypt can benefit from distance consulting.

6. Distance Education. Education and training are often elements of successful economic policy programs. Indeed worldwide, approximately 28% of all USAID training supports business and free market economics, and it is suspected that that proportion may be significantly higher in the USAID/Egypt program. Distance education offers an alternative to traditional classrooms; and can be cost-effective, reach more students, and be less disruptive to host country institutions. A recent study conducted by the U.S. Department of Education found that more than one-half of all colleges and universities in the United States are offering or will soon be offering distance learning opportunities, and that three-quarters of it will be delivered via the Internet. While Internet- based education is growing quickly in the United States, little has

been reflected back into USAID's training programs around the world, or in Egypt. Thus there are significant opportunities to inject distance learning in the activities of USAID in Egypt.

7. Regional Approaches. Many Internet programs follow regional approaches to economic growth. Some focus on extending Internet connectivity to the greatest degree possible in a region, others analyze economic growth constraints and devise Internet and other solutions, and still others seek to maximize electronic linkages between regional economic institutions, from business groups to universities. Regardless, regionally-based programs benefit from the ability to address common problems among professionals with common histories, culture and language. For example, there are networks in Latin American focusing on facilitating interregional trade. USAID is helping develop similar networks in French West Africa. Eastern European networks seek common solutions to evolving from Soviet-dominated socialist economies to globally-oriented free markets. Egypt is a key nation in the middle east and can benefit from Internet-based networks spanning the region.

8. Business Services. The number of independent attempts to use the Internet to facilitate international trade and investment is ample evidence of the importance of information in the emerging global economy. Business groups are among the Internet's most enthusiastic supporters for this reason. These business-oriented Internet programs also offer opportunities to influence economic policies, albeit indirectly. By permitting users to compare economic policies across national boundaries, the Internet's transparency can work as an agent for change. For example, UNCTAD's Trade Points program discovered barriers to exports in a West African nation which prompted its government to remove policy barriers.

Beyond the policy impact of web-based business services, the very use of the Internet to research and identify business opportunities, market into those opportunities, and conduct transactions is by far the greater use of the Internet today. This year, business-to-business electronic commerce amounted to \$17 billion, more than double last year's figure. In four years' time, that figure might reach \$327 billion. Combined with cost savings to businesses and online consumer buying, the Internet could add an estimated \$10 to \$20 billion to the U.S. gross domestic product by 2002. According to a recent study conducted by the U.S. Department of Commerce, the sale and transmission of goods and services electronically is likely to be the largest and most visible driver of the new digital economy. Furthermore that study noted that already orders and sales of certain products such as computers, software, cars, books and flowers are growing rapidly. The opportunities for Egypt to benefit from this new digital age of commerce are substantial, particularly as Egypt seeks to promote exports of its agricultural and industrial production.

C. Challenges Facing the Usefulness of the Internet in Egypt. These are the opportunities for Egypt to benefit from the growth of the Internet. Yet there are a number of challenges which must be overcome. Factors constraining greater utilization of the Internet in Egypt fall into the following categories.

1. Limited Quality, Reliability and High Costs of Services. As noted above,

telecommunications infrastructure in Egypt has improved significantly over the past decade, but doesn't meet the requirements of a digital age. Telecom Egypt's priority is basic telephone service, not data networks. At the same time, Telecom Egypt has a monopoly position for domestic and international telecommunication services, so becomes a barrier to the introduction of more bandwidth and high speed integrated networks that the private sector could supply. Another barrier is the security concern that prohibits uploading of data with wireless solutions. Both institutional barriers contribute to slower Internet speeds and interrupted service.

IDSC/RITSEC has clearly played the catalytic role in popularizing the Internet in Egypt and creating a burgeoning ISP industry. At the same time, their success has created new problems. Due to the cost structure note above, and the general difficulty in negotiating with Telecom Egypt, the great majority of private Internet service providers have opted to work through IDSC/RITSEC which has created a workload that may not be sustainable.

Related to the limited competitive market and the prominent role of government institutions, costs of bandwidth remain high. All ISPs have reported that Internet users are very price sensitive. Therefore unless costs can be substantially reduced, the potential market and application of the Internet in Egypt will remain constrained.

2. Lack of Awareness and Mastery of the Internet and its Potential. Given that the Internet has just been introduced into Egypt, there is understandably a lack of appreciation for the power of this technology. This holds true for businesses, government, non-profit organizations, as well as professionals across all sectors. For example, two businesses associations noted that less than 1/3 of their members have any true understanding on the potential of the Internet. Few professionals have been trained in the use of the Internet. While it has been reported that small, private, and well-endowed Egyptian universities are well equipped with computers and computer-literate instructors, few of the large public university professors are incorporating knowledge of the Internet in their instruction; thereby perpetuating the lack of awareness and mastery over the Internet.

Further, misperceptions about the Internet have appeared in the Egyptian mass media which has fed some apprehension about the possible impact that the Internet might have on Egyptian society and culture. It should be recognized that this lack of awareness is also found in the donor community. In interviews held with a number of donors, it became very clear that many program managers have not realized how the Internet can be a tool to strengthen their programs.

3. Language Barriers. The vast majority of material on the Internet is in English, and little content is in Arabic. While operating systems, software and web browsers do have Arabic versions, choice is limited. Even though English is a second language in Egypt, and taught in the public schools, facility in English is limited. These create effective barriers to use of the Internet in Egypt. There is presently an effort underway by a Kuwait firm based in Egypt, Sakahr, to develop software to translate English into Arabic. Once released, it should help to alleviate this problem somewhat, but based on experience with other language translation software (such as

Spanish, French and German into English), the translations leave much to be desired.

Individuals and organizations wishing to publish materials on the web in Arabic also run into problems. Arabic web development tools are limited, and even operating systems and software that claim to be bilingual create numerous problems for those who want to add Arabic content to the Internet. This forces many to scan Arabic content onto the world wide web, but this then results in very long and frustrating downloading times; not a great solution in Egypt where bandwidth speeds are very limited. While it is clearly possible to successfully publish in Arabic on the Internet (for example, the daily Arabic press), there is a general lack of understanding on how to successfully carry this out.

One hundred and fifty leading Egyptian businesspeople participated in a recent seminar sponsored by the Center for International Private Enterprise (CIPE) in Cyprus. Part of the group spoke only Arabic and the other spoke English and Arabic. When polled as to use of the Internet, 80% of the bilingual group reported use of the Internet, but just 10% of the Arabic-only business group. CIPE has also had sufficient feedback asking that its Economic Reform Today journal be published in Arabic that it has just started publishing, online in Arabic.

4. Cultural Views on Information. As noted above in the discussion regarding the potential of the Internet, one of its foremost uses is displaying information and adding to transparency. This makes the Internet a useful tool for carrying out research, and adds to public transparency and advocacy. As far as government's are concerned, the implicit assumption is the conviction that information belongs in the public domain. However, there may be a residual belief in the Government of Egypt, from its socialist past, that information should be closely held by the state, and that the state analyzes and presents its version to the general public. This relates to raw economic databases, as well as studies and analyses which might put the Government in a poor light. To the extent that these views remain, the utility of the Internet in Egypt will be somewhat diminished.

[At the same time, the Internet itself may, over time, change government views regarding information. Because the Internet permits web publishing at very low cost by literally anyone anywhere around the world, and because this material is readily accessible, it may become increasingly difficult for government's to prevent unfavorable information from reaching their citizenry.]

5. Traditional Views on Management. Introduction of the Internet into organizations needs to be accompanied by an open management style which permits non-hierarchical operations. Maintaining traditional approaches to management, in fact, defeats some of the utility of the Internet. During the course of this study, a number of anecdotes were discovered which drive this point home. In one instance, the owner of a business introduced the Internet but noticed that he was unable to control and monitor all communications. As a result,

he discontinued Internet service and went back to a fax system where he could read all incoming and outgoing messages before his staff did. In another situation, a visit was made to a large government ministry which had 30 computers wired into the Internet. However, only six ministry officials were given written permission, from a high level manager, to use the Internet. In a third case, the principle of a school keeps the computer wired to the Internet locked in his office and therefore inaccessible for students. In a fourth case, the one computer wired to the Internet in a business association is located in the manager's office, so he can supervise anyone that wants to go on-line.

6. Low Per Capita Incomes, Illiteracy, and Geographic Concentration. With per capita incomes in Egypt at around \$1,000 per year, purchases of computers, telephone lines, and even use at Internet cafes is clearly out of the reach of many. Illiteracy rates approaching half the population is a second obvious limitation to the Internet reaching broad populations. A third constraint is the concentration of telecommunication lines in major urban centers of Egypt. These illustrate that the Internet cannot be viewed as a tool of mass communication in Egypt for many, many years.

VI. INVENTORY OF INTERNET USE IN USAID PROGRAMS. Recently, the American Embassy in Cairo published information on the U.S. Mission in Egypt on the Internet⁴². USIS managed the effort and produced a tremendous amount of information beginning with a biographical note on the U.S. Ambassador to Egypt; and spanning consular information and services, the U.S. Commercial Service, Diplomatic Security Service, U.S. Foreign Agricultural Service, U.S. Information Service, a media page, fast link to press releases, an education and culture page, the American Studies Center, the Year 2000 and the Computer, and material from USAID. The USAID materials are also very extensive; and cover all strategic objectives, sectors and projects. Success stories are also highlighted. According to the USIS web master, the Internet permits a much broader distribution of American Embassy materials than was previously possible. For example, the Foreign Economic Trends report is published on the web; the Internet permitting that report to get much wider distribution than before.

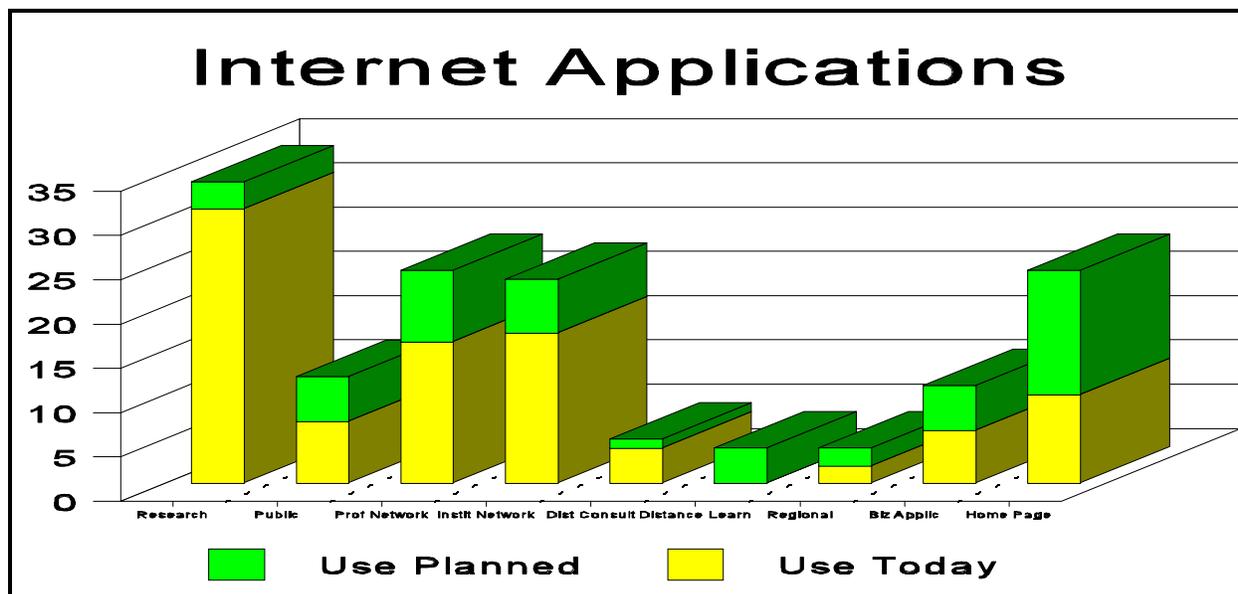
More than 15,000 visitors browsed the U.S. Mission web pages in the past 4-5 months

Annex C presents a table which indicates whether and how the Internet is used by USAID contractors and grantees, managing USAID programs. It is broken down in the eight applications noted above: research/analysis, public advocacy/transparency, professional networking, institutional networking, distance consulting, distance learning, regional approaches and business applications. The survey covered all USAID contractors/grantees working on economic growth programs, along with partners working on other USAID strategic objectives. Naturally for those other strategic objectives, the focus was not on economics and business, but the general applications still apply (e.g. health research as opposed to economic research). The table also

⁴²[Http://www.usis.egnet.net/](http://www.usis.egnet.net/)

indicates whether these organizations have home pages, and whether they have plans to utilize the Internet in the future, even if they are not doing so today.

The following chart depicts the Internet applications being utilized today, and plans to utilize the Internet shortly. The conclusions one can reach from that table are that the primary use of the Internet among USAID projects is conducting research. The next major use of the Internet among USAID projects is for the networking functions of the Internet -- both professional and institutional. There is less appreciation for how the Internet can contribute to public transparency and advocacy and business applications, as well as to distance consulting and distance learning. Of the projects examined, 26% have home pages, and another 36% have plans to publish web pages in the future.



Below is a general review of ten economic growth programs that presently utilize, or have plans to utilize, the Internet. The review describes the overall program, the role that the Internet plays in achieving the program objectives, any lessons learned, and observations as to how the Internet might become more useful in the future.

A. Agricultural Technology Utilization and Transfer (ATUT). This activity supports horticulture development and food crop research. ATUT identifies and transfers new horticultural production, post harvesting and marketing technologies for grapes, melons, strawberries and mangos to the private sector; and develops focused, collaborative strategic research programs aimed at resolving the major constraints to increased productivity of four staple food crops (rice, corn, wheat and fava beans). The project has been in implementation for the past three years.

ATUT has a very strong emphasis on disseminating information and the Internet plays a role in this process. A home page⁴³ was published some five months ago. It was developed by an American firm, which hosts and maintains the site. Although a count is not made of browsers, based on email responses, it is estimated that 300-400 viewers have visited the site since it was published.

The site itself is very comprehensive. It begins with a description of the horticultural crops, food crops, and on-farm water management elements, and discusses technical assistance, beneficiaries and anticipated impacts. A calendar of events is provided, such as the dates for a melon observational trip. Food crop research grant awards are listed, along with contact points. There is a searchable database of agricultural experts and a browsable newsletter and library collection. For example, the August 1997 newsletter featuring strawberries can be viewed and downloaded. The viewer can click on an icon and obtain the latest information about international export markets, optimum production, packing, cooling, shipping, and other aspects of producing melons, strawberries, grapes and mangos. Project managers also use the Internet to carry out research, and network with other.

ATUT's Home Page has a wealth of information. Click on "Grapes" and find:	
Marketing	Technology
current prices	production information
trade directory	harvest information
market analysis	integrated pest management
industry statistics	post harvest information

To ensure the widest possible dissemination of this information, the web page should be translated into Arabic. Project managers, in fact, have plans to do so, but have encountered numerous problems in publishing in Arabic on the web. ATUT would therefore benefit from the technical seminars on Arabic web publishing recommended below. ATUT contractors would be very interested in exploring agribusiness learning options over the Internet. They understand that Wye College is developing such a program, but the Development Training II project might be asked to look into other online educational opportunities that already exist. The project would also be an excellent vehicle for training large numbers of horticultural professionals on how to master use of the Internet, as also recommended below.

B. Business Link Project. Under the Growth through Globalization program, BusinessLink is a proposed American Chamber of Commerce⁴⁴ initiative to develop an Internet-based communications network and disseminate useful business and economic information to private Egyptian firms, particularly exporters and would-be exporters. It was initiated three years ago, but ran into a number of problems which have set back implementation. In fact, the AmCham program managers are still awaiting a business plan from the U.S. contractor which would allow them to proceed. This plan is due in late October and implementation is therefore

⁴³[Http://www.atut.gov.eg/](http://www.atut.gov.eg/)

⁴⁴[Http://www.amcham.org.eg/BusServ/BusLink/](http://www.amcham.org.eg/BusServ/BusLink/)

expected to start later this calendar year.

As conceptualized today, however, Business Link will install and provide high speed Internet access to Egyptian business associations and their members through 64 kbps leased lines to be established by the project. While eleven potential business associations have been identified for Business Link, only four are actively interested at this time. Building on this network, AmCham also plans to develop, in conjunction with domestic and foreign partners, a number of free and fee-

based services and information resources to be offered to domestic and foreign businesses through this network. These services will be designed to provide Egyptian exporters with information and access to trade services they require to compete in the international arena. Subscription to this service is still being analyzed by the U.S. contractor, but estimates today range between LE 800 to LE 1300 annually for an individual subscriber.

It is premature to comment further on Business Link until the business plan is developed, but a few observations are offered here, to help in the review of that plan. First, is the question of the feasibility of AmCham becoming, in effect, an Internet service provider by establishing a leased line network among participating business associations. This program was conceptualized three years ago at a time when there were no private Internet services in Egypt. But now there are at least 40 ISPs, with new companies being formed all the time. The industry is under intense competition and the feeling of many observers is that few are making any money, and that a process of consolidation may take place. One business association interviewed in Alexandria, in fact, had thought about providing Internet services to its own membership but found that it was not feasible, given that their members now can obtain Internet services from seven providers in Alexandria alone. USAID should also be careful that it does not subsidize this service, to the detriment of the ISP industry itself, which is composed of many talented and entrepreneurial small firms struggling to develop market share.

It will also be important to compare the information services to be provided by Business Link with those which another USAID-supported activity, ExpoLink (see below), intends to provide to Egyptian exporters. (In fact, there might be some opportunity to merge both activities.) Other donor trade facilitation services via the Internet, such as UNCTAD's Trade Points and the EEC's Partnership in the Mediterranean (see below) should also be examined, if the Business Link analysts haven't done so already. The business plan should also examine what might be provided in Arabic to obtain a larger pool of potential customers. Opportunities for trade education and training are apparently also to be offered (see text box) but make sure that a wide array of training programs are identified.

Business Link Trade and Information Services

- Country-level economic and trade information
- Research on product markets in various countries/regions
- Legal and regulatory information
- International marketing and trade promotion services
- Trade leads from private sector firms and procurement
- Company-specific information
- Trade education and training, including discussion groups
- Trade finance, risk management and international payments
- Information about local shipment schedules
- Publish economic reports developed by AmCham

C. ExpoLink. Under the Growth through Globalization program, support is being provided to the Egyptian Exporters Association to carry out ExpoLink (previously called the Trade Development Center). ExpoLink seeks to help private Egyptian firms identify potential markets and market requirements abroad and develop and implement sound marketing strategies. Specifically, ExpoLink will provide seven services: (1) subsidize development of marketing materials for Egyptian firms, mostly brochures and trade fairs; (2) design booths for the Association at trade fairs, and subsidize costs; (3) advocate for sound economic policies, primarily through its prominent board of directors; (4) provide marketing and technical information; (5) deliver consulting services on marketing; (6) transfer process and product technology; and (7) offer marketing assistance. The last four services are provided by the Services Support Unit, with assistance from USAID. Five sectors are targeted: leather and footwear, furniture, computer software, processed foods, and ready-made garments. ExpoLink and the Services Support Unit are both interested in developing capabilities for doing research via the Internet.

Most clients are members of the Egyptian Export Association. Typically these clients do not have computers and do not have access to the Internet. They therefore don't use the Internet for market research. The intention of ExpoLink is, therefore, to establish a marketing research facility, and a compensated service to carry out market research. The hope is that later on, in stage two, these business clients will become convinced of the value of the Internet and will buy computers and Internet access, and do the market research themselves. A home page is also anticipated that will publish all important regulations with respect to importing and exporting goods and services.

The USAID consultant for ExpoLink has developed a scope of work for a feasibility study on this Internet service. This internal work order has five tasks: (1) assess the financial and technical viability of an ExpoLink, Internet-based market/technical research service; (2) determine an optimal strategy and plan to develop/finance this service; (3) provide needed technical assistance, training and ongoing support, if the plan is approved; (4) determine if this service is to be made available outside of ExpoLink; and (5) develop a plan to provide service to other export-related associations.

As noted above, there appears to be a close relationship between BizLink and ExpoLink. Therefore this feasibility study should also examine how the ExpoLink service could work, or even merge, with the AmCham endeavor.

Another possibility would be for USAID to consider developing a guide of information resources on the Internet for its targeted industries, such as ready-made garments. Since a number of USAID projects (e.g. the AmCham Biz Link above, and the IESC program below) will be focusing on the same sectors, the information resources guide would be a valuable tool for USAID contractors, grantees and Egyptian partners. Similarly, the Development Training II Project might consider developing a web-based training directory for opportunities in these areas. This training guide would cover the focused industries, plus export management more generally.

D. International Executive Service Corps (IESC). The International Executive Service Corps, a U.S. private voluntary organization, and its volunteer executives deliver technical, managerial and training assistance to Egyptian private enterprises to improve the efficiency and productivity of Egyptian private sector firms under three programs. One is their basic technical assistance program, the second is the Manufacturing Technology Centers program, and the third is the Centers for Quality Assurance program. Approximately 220-250 volunteer executives work in Egypt every year. The overall program is now focusing on software, textiles, leather, packaging, food processing and furniture, as well as exports.

The basic technical assistance program already uses the Internet to a significant extent. Before meeting a client, IESC personnel research the Internet and read about the industry. They contact business associations and potential volunteers via the Internet. U.S. volunteer executive project teams (composed of IESC volunteers who have already worked in Egypt and organized in the United States around sectors) are connected to the Internet and given task lists which they perform and communicate via the Internet. There have also been some instances where volunteers have provided assistance directly to Egyptian firms via the Internet. The IESC has had volunteers who have helped establish cybercafes in Egypt and helped companies design web pages for global marketing. One volunteer was in charge of marketing for Netscape. Some Egyptian clients have found out about the IESC from the organization's headquarters home page⁴⁵.

The Manufacturing Technology Centers Program is particularly open to new approaches to delivering services via the Internet and would welcome the opportunity to carry out some pilot activities. MTC could promote Internet use among their clients. When asked whether their small-medium scale focus would make this impractical, the MTC program manager responded that most of their clients have computers and Internet access, they just haven't mastered use of the Internet. Work could be organized by sector (e.g. food processing or packaging) or by subject (e.g. technology transfer). A virtual team in the United States could be assembled to help out Egyptian firms in these sectors. One potential constraint is the limited use of the Internet by U.S. volunteer executives. However, the IESC in the United States has 250 field assistants who can train volunteers how to communicate and work over the Internet.

It would be worthwhile to undertake some pilot efforts to utilize virtual space to a greater extent in the IESC programs, and particularly the MTC program because of their interest in the subject. IESC might also consider establishing a web page in Egypt and publishing some of the reports that volunteers have prepared based on their assignments. The home page could also permit potential Egyptian applicants to download forms and learn about how the IESC program might help them. Relying on the Internet can also help to reduce some of the costs of the IESC program and therefore help it become more financially self-sustaining.

E. Development Economic Policy Reform Analysis (DEPRA) Project. This project

⁴⁵[Http://www.iesc.org](http://www.iesc.org)

works with the Ministry of Economy and the Ministry of Trade and Supply. It supports institutional strengthening and carries out policy studies; for example, DEPRA just completed a study on the economic competitiveness of Egypt. DEPRA also supports both formal and on-the-job training and brings in short-term consultants to carry out studies which are beyond the technical skills of DEPRA's resident staff. DEPRA is also assisting with computerization in the Ministry of Trade and Supply. For example, presently DEPRA is assisting with a computer system to monitor antidumping and is establishing an automated system that will ease Government of Egypt inspections of imports which should significantly reduce delays with imports. The project supports USAID's Sector Policy Reform Program.

Project staff utilize the Internet extensively for carrying out economic research and for professional networking. A recently-completed mid-term evaluation suggested that the project establish a home page and publish its studies there. DEPRA plans on doing this.

However, staff queried whether USAID might wish to centralize policy studies and publish them elsewhere. While the project supports training, they have not considered the possibilities of distance learning.

When considering how best to set up a data network to streamline Egyptian import inspections, an analysis indicated that it would be cheaper to set up a dedicated Wide Area Network, WAN, than to utilize the Internet. In other countries, an Internet-based system would have been most cost effective, but in Egypt, with slow download speeds and expensive Internet service and telephone costs, the analysis suggested a WAN solution.

DEPRA is apparently going to establish a home page. Assuming USAID does not set up a centralized system for publishing economic research results, that home page will present these studies. Consideration should be given to publishing important reports in both English and Arabic for reasons stated above. Thought should also be given to making creative use of DEPRA's home page; for example (1) working with the Ministry of Economy to publish economic data for Egyptian researchers to utilize; (2) publishing important international economic studies; or (3) setting up virtual conferences to discuss economic policies of particular relevance to Egypt. Beyond the home page, DEPRA should work with the Development Training II program to see if their counterparts could take advantage of distance learning opportunities. DEPRA may also want to intensify its computer and Internet training for Ministry of Economy staff.

F. Strengthening Intellectual Property Rights in Egypt (SIPRE). As part of the Sector Policy Reform Program, this activity works on intellectual property rights compliance for patents, trademarks, and industrial designs. SIPRE has a web site⁴⁶, serving three purposes. The first is to post information; functioning like a bulletin board for agencies that they work with, such as posting recent developments in trade mark information as it moves into Egypt. The second is to issue a Request for Proposals on the web to obtain trademark software and data entry services. To test the capabilities of would-be awardees, all the information is available on the site,

⁴⁶[Http://www.sipre.com.eg](http://www.sipre.com.eg).

or by queries via email. A third use of the web site is as a tool for customer orientation and advocacy, leading to better regulations. SIPRE also publishes pictures of managers and staff to give them a morale boost. The vast majority of the web site is in English, just a bit of explanation up front is in Arabic; partly because of the technical problems that others have articulated.

Over the next year, SIPRE will develop a database of 22,000 Egyptian patents that will be searchable over the Internet. One issue they are facing is whether to offer this information free or to charge, so that the web site can be sustained after USAID support ends. Egypt hopes to become a regional center for patents and trademarks. The main competitor is Saudi Arabia; the latter has money but Egypt has long-term expertise. Egypt has had a patent law since 1949. The Internet could play a critical role if indeed Egypt becomes the regional center for patents and trademarks.

The project plans to broaden Internet access to partners in a variety of Egyptian organizations concerned with intellectual property rights; such as the Ministry of Higher Education, the Ministry of Trade and Supply, the Ministry of Culture, the customs department, police units, the Ministry of Agriculture and the courts. Internet access will allow the group to discuss common issues. Right now, for example, the Government of Egypt is communicating with the World Intellectual Property Organization (WIPO) via e-mail through the contractor's computer equipment. WIPO uses the Internet to solicit comments on a variety of subjects, using the Internet like a bulletin board. SIPRE will work with the Administration of Justice program to train judges in intellectual property rights.

Distance learning on various aspects of intellectual property rights might be a possibility. The program managers like the idea of awareness and professional training on Internet use for their many counterpart agencies. SIPRE staff might want to speak with Development Training II personnel to look for professional development opportunities via the Internet.

G. Agricultural Policy Reform Program (APRP). The overall goal of the Agricultural Policy Reform Program is to develop and help implement policy reform recommendations in support of private enterprise in agriculture and agribusiness. APRP assists the Government of Egypt to (1) identify remaining policy barriers to private enterprise in agriculture and agribusiness; (2) create a liberal competitive marketing system; (3) encourage competition among all entities involved; (4) increase employment and income in the agricultural sector and agricultural-related activities; (5) improve efficiency of land and water use in old and new settlement areas; and (6) target food subsidies to the poor and improve food security.

Project staff use the Internet extensively to prepare agricultural market reports. Use of the Internet has become almost indispensable for carrying out research. The project held a two-week course on using the Internet for agricultural marketing. Approximately 12 people attended and it generated a lot of interest. Project managers believe that additional training should be provided. Staff believe that as Egypt's agricultural markets open up, the Internet will need to take on additional functions, not just downloading information from the rest of the world. Egypt will

need to promote its agricultural sector to the international marketplace. Policies and regulations, for example, with respect to Egyptian agriculture will need to be placed on the web. Newsletters will also need to be published for the rest of the world. [In fact, APRP already publishes a newsletter that would certainly be of interest to Egyptian readers on the Internet. For example, the March 1998 edition of RDI Newsletter contains abstracts of a variety of new studies and papers, with titles such as “The Total Farm Tax Burden in Egypt”, “Land Tenure Policy Study” and “National Agricultural Research and Extension -- Looking to the Future”.]

The project does not have its own home page. Staff, however, are working with Ministry of Agriculture officials on developing a ministry home page. Interest in using the Internet was also expressed by an individual who is creating an Egyptian rice association. He has been considering creating a home page for his association.

The Ministry of Agriculture has 30 computers wired into the Internet. However, only six individuals have high-level permission to use the Internet. This points out the need to consider Internet management when introducing this technology into organizations.

One issue concerning the utility of the Internet to the Ministry of Agriculture is the dissemination of information. There is a reluctance to release statistics, and those agricultural statistics that are made public, are released rather late so that the benefits cannot be fully realized by researchers. The International Food Policy Research Institute, for example, is working with this program and has carried out an extensive household survey covering 2,500 families throughout Egypt in 1997. The manager of that program believes it to be the most comprehensive and accurate socio-economic data of its kind in Egypt. Thus far, only three diskettes with the data have been released. It would be far more valuable to Egypt if it became widely available, but the question is whether officials would permit an Internet publication.

Thought might be given to APRP developing a strategy for utilization of the Internet in agriculture policy-making and implementation in Egypt. Bring out professionals knowledgeable about how other agricultural agencies around the world deploy and benefit from the Internet. Develop a vision for how the Internet can play a useful role in informed agricultural policy analysis, formulation, and dissemination. Then develop activities to carry out the plan, including a significant increase in training to strengthen professional mastery of the Internet in Egypt. Consider ways in which managers in the Ministry of Agriculture can begin to appreciate that managing the Internet is quite different from traditional approaches to government administration. Also look for opportunities for distance learning.

H. Privatization Program. USAID is supporting the Government of Egypt with the sale of public enterprises and major assets through institutional development and related technical assistance. USAID provides support in four areas: sales, public relations, organizational development and policy support. The Privatization Project provides financial advisory services, policy issue resolution, sales support, Capital Market Authority technical assistance, organizational development and training, and public relations. A second project, the Rapid

Restructuring Project, helps get ailing state-owned enterprises in shape for privatization. A third project reports, monitors and evaluates the work of the other two projects, undertakes special policy studies, and examines the impact of privatization.

The Privatization Project⁴⁷ utilizes the Internet in its operations. The Internet is used to communicate with potential investors and buyers. The Internet allows the Project to post general economic data, instead of having a home office oversee the same function. The Internet is a tool for information gathering for clients; and information dissemination for developing deals. The Internet allows the contractor to identify countries, market segments, and financial infrastructure, and therefore allows them to structure first-tier marketing. It is a supplement to just advertising in journals like The Economist.

The Privatization Project web page explains the mission of the privatization project, and provides information to interested readers on Egypt's economic and business climate, investment laws, a listing of companies that are in the process or pending privatization, and a fact sheet on each of these companies. The web page also indicates an ability to download bidding applications but technical problems have not made this possible.

The second stage of privatization, information dissemination, should be possible over the Internet but it is limited by very poor quality of service in Egypt. The Project wanted to provide bidding instructions, fact sheets and other information on specific deals over the web site, but poor service limited the capabilities here. Thus the USAID contractor is now getting a U.S. web developer to clean up the web site, post fact sheets, etc. The Project's web site will therefore be limited to factual information only, it won't be interactive. If the contractor had known how poor local quality was, they would have begun with an international server and web developer. The Privatization Project focuses on deals, not advocacy, so the transparency aspects of the Internet are not considered important. However, the project wanted to have "hot issues" but because of quality problems this service hasn't been working.

When the contractor leaves, it is expected that the Public Enterprise Office will have a web site and that Office will be encouraged to use and broaden it with more government information. The Privatization Project has conducted a training session for staff, drafted an Internet manual, and encouraged others to use the Internet. However questions of motivation of staff were raised.

The other two contractors do not have web pages. The Rapid Restructuring Project is just that; in place for just a little over one year. While that Project uses the Internet to communicate with its other partners and to identify short-term consultants, the Internet is not incorporated in their work with their Egyptian Partners. The monitoring contractor produces quarterly and semiannual reviews of privatization which are distributed to 800 people in the public and private sectors.

⁴⁷[Http://www.privatizationegypt.com.eg/main.asp](http://www.privatizationegypt.com.eg/main.asp)

The Internet could play a greater role in privatization in Egypt, now that the Internet is expanding rapidly. A privatization net could be established in Egypt, allow for more transparency and a dialogue on privatization issues. The quarterly and semiannual reports could be published on the Internet, since they are already distributed so widely in paper form. Distance learning opportunities could also play a role. Contractors believe that the capital markets area is particularly appropriate for distance learning, and this is addressed in the next section below.

USAID is developing a new privatization project. Therefore, a strategy should be developed from the very beginning of this new project to better utilize the Internet in future privatization activities. Instead of starting from scratch, the implementors should examine how other privatization programs around the world have benefited from Internet use, and adopt these best practices to Egyptian conditions.

I. Capital Markets Program. Two million Egyptians are investors in Egypt's stock exchange which started in 1994. Six hundred companies are listed but 80% of all activity is vested in only sixty companies. There are 140 brokerage firms in Cairo and Alexandria.

USAID has just embarked on a new program to strengthen capital market institutions in Egypt. The project will work on automation, surveillance systems, upgrading clearance/settlement systems, trading, training related to automation, and work with the Central Bank on clearance of payments. It will also work on regulatory issues, like redrafting laws with the Ministry of Economy and establishing prudential regulations. The project also has an institution-building feature, which includes training. The fourth area is debt market development; there being few government and corporate bonds on the Egyptian market today.

Egypt's stock exchange is planning to use the Internet and will develop a web site. Target date of initiation is October, 1998. The exchange has a strategy for achieving transparency in operations and the Internet has a role. The target audiences are both the domestic market and the international market. The Internet will be integrated with other communication alternatives such as publications, advertisements, conferences and seminars, and training materials. A multimedia Communications and Training Center was inaugurated in September 1998 which will be the focal point for much of this activity. The Center aims at disseminating information and providing on-the-job training to increase investors awareness and improve market efficiency. Training programs will be coordinated with the Egyptian Capital Market Association and the Investment Management Association. The stock exchange is negotiating with the Institute of Finance in London and Euromoney to prepare training materials, in Arabic, to raise the professional capacity of capital market practioners. The Euromoney training materials are on CD-ROMs.

Egypt's Capital Market Authority (CMA) already uses the Internet to carry out research related to its mandate. The Authority has a book mark directory of all capital market authorities around the world, which is supported by the International Organization of Securities and Capital Market Organizations. The IOSCO web site permits discussions among capital market authority organizations. The Egyptian Authority is also planning a web site with laws/regulations/circulars

and is working to achieve this objective. A web site for the Authority would be useful because of problems with dissemination of information in Egypt, information which is needed for brokers and investors to uniformly learn of regulations. The present lack of transparency could affect the market, particularly because thirty percent of the shares are owned by foreigners. The CMA will house the Internet operation in its bureau for electronic devices. Relevant reports will be pulled off the web and placed in the CMA library. CMA intends to disseminate raw data and leave it to the market to interpret and analyze that data. The CMA also intends to put out press releases over the Internet. Their monthly statistical bulletin will also be placed on the web. The web site will be in both English and Arabic.

The Egyptian Capital Market Association (ECMA) was founded in 1996 and is Egypt's first non-government, nonprofit professional association in the securities industry. ECMA has two major projects which the Internet can help with: (1) developing and disseminating a newsletter or magazine; and (2) developing an information center to gather and disseminate data of interest to members. There are now 257 members of this Association, representing all stock brokerage houses, fund managers, other portfolio managers and venture capitalists. All institutional members have Internet access, and perhaps half of the individual members have Internet access.

It should be evident from the above description of Egypt's capital market institutions that they clearly see a role for the Internet in their operations and don't need to be convinced of its value. It will be up to USAID's new capital markets contractor to work with these institutions to develop strategies and plans, and then implement these activities. While the above descriptions clearly demonstrate the awareness of these institutions to the role that the Internet can play in research/analysis, public transparency and advocacy, and professional and institutional networking, it is not clear that they have considered how the Internet can facilitate distance technical assistance and distance learning. USAID/Washington is entering into an agreement with the U.S. Securities and Exchange Commission which would permit the CMA to receive on-line technical assistance. Furthermore, there are a number of distance learning training opportunities in the United States that could benefit brokers, as the accompanying text box so indicates.

Financial Courseware is a technology-based, interactive multimedia and electronic publishing company. The firm specializes in sophisticated and authoritative training and reference resources on international financial markets and instruments. Financial Courseware's training covers such topics as an introduction to capital markets, domestic bond markets, understanding derivative instruments, economic and technical analysis, introduction to foreign exchange, dealing with the foreign exchange market, forward rate agreements, understanding futures and options, futures pricing, hedging with futures, trading with futures, financial market mathematics, introduction to the money market, option techniques, introduction to regulation and compliance, understanding swaps, swap techniques, treasury risk management, the financial markets association diploma, introduction to foreign exchange and money markets, fundamentals of futures, fundamental macroeconomic analysis, fundamentals of options, repo markets, & swap fundamentals.

J. The Economic Policy Initiative Consortium (EPIC). EPIC was established in 1996 as a private, non-profit initiative with two objectives: (1) to strengthen the capacities of Egyptian economic policy institutes and scholars to provide research and technical support for their

government's economic reform initiative; and (2) to expand public awareness of, and support for, economic policy reform in Egypt. EPIC was founded under the first subcommittee of the U.S.-Egypt Partnership for Economic Growth and Development, and it is administered by the International Center for Economic Growth.

EPIC works with academic institutions and the economic ministries and staff. Program managers observed that there is an extremely high level of computer illiteracy, let alone knowledge about the Internet. Eighty percent of EPIC's audience is computer illiterate. Therefore, over the past two years, EPIC has been working on institutional development to increase information technology capabilities of faculties. Instead of providing journals, EPIC is linking these faculties onto the Internet. These faculties are generally not aware of what the Internet offers and initially want more tangible support (e.g. books and printed journals), as well as computer hardware.

Under another activity, EPIC is linking five consortium members to the International Center for Economic Growth virtual network which includes four hundred research institutions around the world. In reality, 20 Egyptian faculties of economics, centers and "think tanks" will gain access to ICEG on-line services this year. They will gain access to the ICEG home page and access to the network's abstracts, and an ability to download reports. The quid pro quo is that these institutions are to provide their own research products, abstracted but in English not Arabic. Receiving high quality research studies is taking a lot of time, and often they are in typed paper format, not electronic.

EPIC is developing its own home page, which should be ready next year. It will permit viewers to obtain the EPIC newsletter, download reports, bibliographic citations, news columns, and links to interesting materials

The EPIC program should be ideally suited to increasing the ability of Egypt's economic research community to gain access to and benefit from mastery of the Internet. However, there may be questions about EPIC's ability to carry out this role. One possibility would be to augment this capability with visiting economists from the United States who are more knowledgeable about how the Internet could play an important role in economic policy analysis and formulation. EPIC is also ideally suited to take products of research from USAID's projects and publish them on the web. However, the same concerns exist. ECES, for example, appears more capable to do web publishing than does EPIC at least as of today.

VII. OTHER DONORS. A survey was made of donors to ascertain whether and how they use the Internet to carry out their programs. The initial list of donors was taken from the SRI International Report entitled "Donor Activities in Egypt: An Assessment", dated April 1998. This report was carried out for the Growth through Globalization Monitoring and Evaluation Unit and was selected because that study focused on donor activities supporting export and private sector development. In total, ten donor organizations were interviewed: The United Nations Development Program, OUDA (Operational Unit for Development Assistance), the International Finance Corporation, The World Bank, the German GTZ, the United Kingdom, the European

Union, the Japanese JICA, the Swedish SIDA, and the Canadian IDRC.

In short, there is not much to report. Only four organizations had programs of any relevance. The UNDP is supporting a pilot project to establish an Internet center in a governorate which will help businesspeople learn how to utilize the Internet. The German GTZ had an interesting agribusiness program that utilizes the Internet extensively to network among German agribusiness programs through the region. The European Union has a Mediterranean Partnership Program which utilizes the Internet to establish European-Egyptian business partnerships to some extent. The Canadian IDRC has a program which will help link donors supporting small and micro businesses in Egypt (see below).

VIII. GENERAL APPROACHES. The following are seven general activities that USAID/Egypt could carry out that would strengthen USAID's economic growth programs in Egypt, and at the same time improve the utility of the Internet as a development tool in Egypt. While focused on economic growth, however, many of them are equally valid for strengthening USAID's other strategic objectives.

A. Support Movement to Private and Competitive Data Networks. As noted above, limited quality and reliability of Internet services and associated high costs result from the both the monopolistic position of Telecom Egypt as well as security concerns about wireless communications. Questions regarding the pricing policies for obtaining bandwidth have also been raised, as well as whether the IDSC/RITSEC solution of supporting the ISP industry will be viable in the longer run. Unless a more competitive and privately managed data network is established in Egypt, these problems will persist and further constrain the growth and utility of the Internet in Egypt.

USAID/Egypt has been supporting the telecommunications sector in Egypt for many years and has an ongoing program to do so. It is suggested that the efforts at institutional strengthening and policy reform focus attention on the above matter. The Telecommunications Sector Support Project, Second Memorandum of Understanding, clearly includes private sector participation in Internet services in the domain of USAID's area of interest. There is also some reason to believe that the Government of Egypt would be willing to create a private sector managed national Internet backbone for Egypt, since a number of knowledgeable managers in that sector have suggested that there discussions going on about finding a private solution to improve services.

Why should USAID focus on more efficient Internet services, given its already significant commitment to the general improvement of telecommunication services? The reason is that in the new global information age, it is imperative that economies have access to data networks that are efficient. It could also be argued that there will be a greater economic benefit for Egypt from incremental investments in data networks, as opposed to plain old telephone services (POTS). Increasing the teledensity rates of POTS may not have a greater impact on the economy than more efficient data networks, for which the Internet is a critical component.

USAID should therefore offer to conduct an immediate study on ways to achieve a private and competitive Internet national backbone for Egypt. The timing is right and it could positively influence the evolution of this industry in Egypt. Such a study should examine the following: (1) the technological options for increasing bandwidth and reducing costs for such bandwidth in Egypt; (2) the pricing policies for offering bandwidth in Egypt to Internet service providers; (3) the options for creating and managing a national Internet backbone in Egypt; (4) the alternatives for moving into a private managed system, that is also competitive, for the provision of bandwidth; (5) choices for managing the Internet industry; and (6) policies to create a fair and transparent system for regulating the ISP industry in Egypt. The study might also examine the hypothesis in the previous paragraph that Egypt could benefit more from efficient data networks than merely incrementally increasing the teledensity rates of POTS. The study could be implemented in just a few months, and need not be a major, multi-year endeavor. Representatives of IDSC/RITSEC, Telecom Egypt and the new telecommunications regulatory authority would need to be on-board before beginning this study.

B. Increase Access to, Awareness of, and Mastery of the Internet. There is near universal agreement that it is critical to increase Egypt's access to and understanding of the Internet and the potentials that it holds to spur private sector-led economic growth. Increasing access to and awareness of the Internet will lead to greater numbers of Internet users in Egypt and increasing professional mastery will improve their utilization of the Internet. While this general recommendation has equal validity across USAID's strategic objectives, it has even greater urgency in the economic growth area because of the degree to which private industry around the world is embracing this technology.

It is therefore proposed that USAID carry out a concerted effort to ensure that Internet access and training is incorporated in all economic growth programs. Contractors/grantees should be tasked with ensuring that a wide range of counterparts be given the opportunity to become professional masters of the Internet. A four-pronged approach is suggested:

1. Increase Access to the Internet. All USAID economic growth programs should budget for computers and Internet services. It will be important to ensure that these computers and Internet access is not limited to contractors/grantees but includes Egyptian counterpart organizations.

2. Increasing Awareness. Short seminars should routinely be carried out in all economic growth projects that explain the basics of the Internet to novices, and to heads of organizations. Training on the technical features of the Internet to novices can be delivered by both ISPs and information technology training providers in Egypt. Training for the heads of Egyptian organizations should best be taught by their counterparts, managers of large organizations in the United States, to explain how the Internet has transformed their organizations. Similarly, observational trips to the United States for Egyptian organizational directors should routinely permit their examination of how the Internet is integrated into similar institutions in the United States.

3. Increasing Professional Mastery. All USAID economic growth programs should routinely hold several-day workshops on how professionals can improve the mastery of the Internet, to become better professionals. Thus, workshops for economists, agricultural economists, industrial economists, business lawyers, economic journalists, marketing managers, capital market analysts, business analysts, agriculturalists, and others should be planned and carried out. These workshops will be particularly effective if they are taught by professionals in the same field. For example, a workshop for Central Bank economists on Internet use should be taught by representatives of the Federal Reserve Bank system in the United States and/or developing country central bankers who regularly utilize the Internet.

4. Reaching New Professionals. It will also be important to ensure that university instruction of would-be professionals also incorporate mastery of the Internet. Reportedly, Egypt's private elite universities have embraced computers and Internet technologies, but the larger public universities haven't; in part due to large student: teacher ratios, low budgets, and rigidities in instruction. USAID might consider holding workshops and seminars for professors of economics, business, economic law and similar faculties on how to incorporate mastery of the Internet in their instruction. Again, the workshops would ideally be taught by American professors who have already climbed this learning curve and now incorporate Internet learning in their instruction.

To carry out this recommendation, it will be important that USAID activity managers discuss this recommendation with their contractors/grantees. If in joint agreement, they need to review the governing contracts and grants to see if they are flexible enough to cover additional computers and training. If not, modifications to the contracts and grants may be examined. Budget modifications might also be necessary.

C. Arabization. The Internet is largely an English medium; the vast majority of content being in English (as well as the computer operating system, software applications, and Internet browsers). While many Egyptians are fluent in English, many more are not. Thus if the Internet is to become a more useful development tool for Egypt, and if USAID economic growth projects are to benefit from utilization of the Internet, much of the content from USAID projects should be published on the Internet in Arabic.

Thus a general recommendation is that all USAID economic growth projects that will publish on the world wide web ensure that content is in Arabic, as well as English. While there might be some instances where the intended audience is narrowly targeted on English speakers only (such as marketing promotion in the United States), it is assumed that most web publishing should be bilingual.

As noted above, USAID contractors and grantees who have seen the value in having Arabic content on the Internet have experienced problems with publishing in Arabic for technical reasons cited above. Therefore it is also recommended that USAID organize workshops among

contractors and grantees, and invite potential solution providers (such as Microsoft and Netscape representatives, companies specializing in Arabic software, and web developers) to share information on how to overcome these problems. Many USAID contractors/grantees would welcome such workshops, as would others from the U.S. Mission, such as USIS. DMS might be best placed to organize these workshops.

Another possibility for easing access to the Internet for Egyptian Arabic readers would be to publish hard copy newsletters or directories of useful English web sites dealing with economics or business. There is already one Egyptian NGO producing a periodical with this information for which it is charging a fee, but it is not concentrated in the field of economics and business.

D. Publish Egyptian Content on the Internet. The Internet is already a useful vehicle for Egyptians to conduct research on developments outside of Egypt, but there is not yet sufficient materials available on Egypt itself. For example, a nongovernmental organization in Alexandria which gained Internet access nine months ago uses the Internet as a way out of Egypt; not as a window on what is happening domestically. Most USAID contractors, grantees, and Egyptian partners, indeed, utilize the Internet as a window on the world, but not as a tool to learn about developments in country. Clearly, adding Egyptian content will make the Internet more useful as a development tool for Egypt.

USAID economic growth programs produce an abundance of reports on major features of the Egyptian economy; materials that would have more utility if they were widely disseminated. As the Internet grows in Egypt, it will become a better medium for dissemination of research findings. And as more Egyptian content is published on the Internet, the medium will be of more interest to others to use. For example, the database collected by the International Food Policy Research Institute of 2,500 households in Egypt would add great value to the Internet for Egyptians. So would publishing a report prepared by DEBRA on the economic competitiveness of the Egyptian economy.

There are several routes that could be taken to achieving this end. One would be to simply task each contractor/grantee/ Egyptian partner to develop home pages and to publish their reports on these home pages. These home pages could, indeed, be hyper linked to each other if they cover similar topics. Another approach would be to publish these reports on USAID's Development Information Center home page. Since this web site is already used by researchers to find hard copy holdings

Remember that the Internet permits interactivity. For example, articles published in CIPE's on-line Economic Reform Today permits readers to discuss those articles with the authors in a public forum. Thus, USAID might wish to publish reports on the Internet and then permit a public discussion of those articles with the authors for a period of time.

of USAID reports, researchers would tend to look at this page when looking for new materials. A discussion with USAID contractors/grantees/Egyptian partners should be held to determine the most favored approach, which, in fact, might turn out to be a combination. For example, there

may be some reports that contractors/grantees/partners would want to publish on their own home pages, but there may be others which are too sensitive and where some “distance” is more appropriate. The final two approaches would be to examine whether the EPIC program or USAID’s Technical Assistance for Support Activity would be appropriate homes for research studies.

Beyond economic research materials, there might also be possibilities to encourage private information providers to expand on-line content with some seed money, with the expectation that Egyptians and foreigners would be willing to pay for this information, thereby creating a sustainable database of commercial information. For example, the creation of an on-line Thomas’s Register of Egyptian products and services might have commercial value and this would facilitate identifying potential Egyptian suppliers of goods and services.

E. Create Virtual Egyptian Development Networks. The potentials of the Internet as a professional or institutional networking tool were described above. IDSC has demonstrated its feasibility in Egypt with the creation of HealthNet, also described above. An example of a small and micro enterprise network is articulated below. Business Link would be a second example. To some extent the EPIC network may be a third. The recent assessment of donor activities in Egypt pertaining to private sector economic growth suggested that USAID develop a website linked to other donor sites which publishes activities by different donors to exchange information, communication and coordination on projects. In fact, meetings with the GTZ and UNDP also suggested a willingness among them to create an Internet-based donor network to share information. Other possibilities would include a privatization network and a capital markets network.

Not all Internet development networks, however, are successful. Experiences from Egypt and drawing on the global study conducted by the contractor suggest several requirements for a successful virtual network. First, there must be a willingness to work together in a fundamental way: No amount of virtual space will overcome rivalries or lack of willingness to collaborate. Secondly, there must be a champion; an individual or an institution that believes that its own programs will be strengthened from such a network and which is willing to bear the costs and time involved in setting up the network. Thirdly, the network must be tightly focused around a clear set of objectives. Fourth, there must be tangible benefit to the members in participating in the network. Fifth, each participant, in exchange for the benefits, must be willing to offer its own active engagement, research products, advice, and services to making the network a success.

F. Experiment with pilot applications. As we enter a fundamentally new, global information age, traditional approaches to economic and social development need rethinking. The Internet, as a harbinger of this new information age, has just been introduced into Egypt. There is precious little experience and few models to draw upon. All this argues for encouraging innovation and trying pilot projects on ways in which the Internet can play a role in strengthening economic growth in Egypt. Start small, and build upon success.

Three examples of pilot projects might revolve around the International Executive Service Corps program, electronic commerce, and creating virtual discussions in Egypt on topics of particular relevance. The IESC program was already discussed above and virtual relationships between teams of IESC volunteers in the United States and Egyptian small and medium enterprises in food processing and packaging should be encouraged. If successful, it could lead to ways of the IESC program becoming more financially self-sustainable.

Electronic commerce is on the minds of many Egyptian leaders in the information technology industry. The Internet Society of Egypt has a committee developing pilot projects for electronic commerce in Egypt. The Government of Egypt has its own committee examining the subject. CainNet 98 and a Cairo conference in late September focused on electronic commerce. USAID might wish to review these proceedings and select one or more pilot electronic commerce activities that directly fit within USAID's articulated objectives. For example, some pilot activities might be identified relating to capital markets, or to marketing of Egyptian agricultural exports in overseas markets.

A third pilot project would be for USAID to hold one or more "virtual conferences" on topics of importance to Egypt. Follow the format of the World Bank "think tanks" and post one or more reports for participants to read. Select one or more moderators and allow a period of six weeks or two months to solicit views from Egyptians, Americans and others who have something to contribute. For example, USAID has a goal of moving from an aid to a trade relationship. Open up the discussion on how this can take place. Obtain the views from a wide audience by announcing it in other media (e.g. newspapers) to catch the attention of potential participants.

Another, more immediate, possibility would be to summarize this report, publish it on the Internet and open it up for discussion. It would be a good test case, since the subject matter would be of most interest to those who are already "wired".

G. Incorporate the Internet More Fully in USAID Operations. Now that the Internet is established in Egypt, the Mission needs to better incorporate the Internet in all its operations, from developing its new strategy, to designing and implementing new programs. The Internet can also play a useful role in sharing information among USAID and its many, dispersed contractors, grantees and Egyptian partners.

USAID is in the process of developing a new strategy for its assistance in Egypt. Utilization of the Internet should be incorporated in that strategy, permitting the Mission to consider ways in which it can benefit from the Internet from the earliest stages of program planning. The contractor recently developed a strategy for USAID/Mongolia, in fact, that did this very thing. It will be a useful blueprint for proceeding in the years ahead.

All program design teams should be tasked with considering how information and communications technologies can play a role in achieving articulated objectives. Insist that thought be given to how these programs can be carried out in innovative ways. Require contractors to assess the institutional needs of new partners. Make sure that the designs include computers, software, Internet access, training, and delivery of services using the Internet. Don't accept generalities; insist on specifics as a check to ensure that real thought has been given to the subject. Even if program designs have not included the Internet, it is not too late to introduce these technologies during implementation. This report illustrates the point.

The Internet can also play a useful role in strengthening communication among USAID and its many contractors, grantees and Egyptian partners; and putting more of a human face on USAID operations to the Egyptian public. One vehicle to overcome the sense of isolation that a number of USAID contractors and grantees have articulated, while having the salutary effect of creating a human interest perspective on the USAID program, would be to create an on-line journal on the comings and goings of USAID programs. Each month (or quarter if desired), each contractor, grantee, and Egyptian partner would publish a page on this journal which would describe their current activities. They could insert text, graphs, or photos if they desire. An Internet service provider in Cairo would obtain each submission directly and publish the entire journal on the web, perhaps beginning with a few opening remarks by the USAID Mission Director.

USAID also needs to strengthen its internal capabilities to utilize and benefit from the Internet in Egypt. All staff should be encouraged to attend the numerous training programs that are proposed throughout this report. USAID staff can learn, in tandem with their partners. Core capabilities also need to be built into the Mission, perhaps by designating Internet specialists in each office or division. These program managers would specialize in the development applications of the Internet in their field of specialty. At the same time, DMS should strengthen its technical capabilities with respect to the Internet.

IX. SPECIFIC APPROACHES. Specific Internet development applications were identified for three USAID economic growth programs: The Private Sector Commodity Import Program, participant training for all economic growth programs, and small- and micro-enterprise development. The Private Sector Commodity Import Program was selected because of its size, and ease with which Internet applications can be introduced. The participant training program was selected because training is fundamental to all economic growth programs and there is great potential to introduce web-based training. Small and micro-enterprise development programs were selected because they illustrate opportunities for using the Internet for professional and institutional networking and for conducting pilot projects, and because a new small and micro enterprise initiative is about to be launched.

A. The Private Sector Commodity Import Program (PRCIP). USAID is supporting the Government of Egypt's efforts to restructure its economy by accelerating private sector-led, market-based growth. The Private Sector Commodity Import Program supports this effort with a \$200 million per year program to Egyptian private sector businesses, accessible through twenty

participating Egyptian commercial banks, for short-and medium-term trade and investment financing for the importation of equipment and materials from the United States. Terms range from 6 to 24 months depending on the importer and the use to which the commodities will be placed.

The PRCIP program has an Internet presence under the business and procurement section of the USAID/Washington home page⁴⁸. In that posting, the program is described, procedures are enumerated, and a searchable database of potential Egyptian importers is provided for American exporters. It now makes sense to create a similar service for Egyptian importers interested in the PRCIP.

The Private Sector Commodity Import Program is presently helping an Internet service provider in Egypt import approximately \$1.3 million in American computer technology.

The Private Sector Commodity Import Program web page in Egypt would have the following features, in English and Arabic: (1) a description of the program; (2) an ability to download application forms; (3) electronic linkages with the Egyptian banks participating in the program; and (4) support to the Egyptian importers to identify sources of supplies from the United States. The last feature is particularly important because sometimes Egyptian importers have difficulty in obtaining several competitive bids for American goods because of their lack of information on how to find supplies from one or more sources. The web page could provide a step-by-step guide to how the Egyptian importer could use the Internet itself to find sources for American goods and materials. The web page would have hyperlinks to online catalogues such as the comprehensive Thomas's Register, and speciality on-line catalogues for a wide variety of American products. Not only would this information help the Commodity Import Program, but it would also assist other Egyptians interested in locating American suppliers. The U.S. & Foreign Commercial Service would help construct this web page. The web page would permit viewers to link electronically to the U.S. Commercial Service, USAID and the IESC (which helps to identify sources of American supplies) in Cairo.

USAID could launch this initiative by first deciding on the content it would want to publish, along with the special features desired (e.g. the ability to download forms, hyperlink to on-line catalogues, and communicate between banks, USAID, Commercial Service and IESC). Then USAID should ask several prominent Cairo-based Internet service providers for bids to build, host and maintain the web page. Once published on-line, publicity in other media (e.g. newspapers) would help popularize the site, and also create another reason why Egyptian businesspeople would want to gain Internet access.

B. Distance Learning for Economic Growth. Internet-based distance learning, particularly in the fields of business, management and economics, is growing rapidly in the

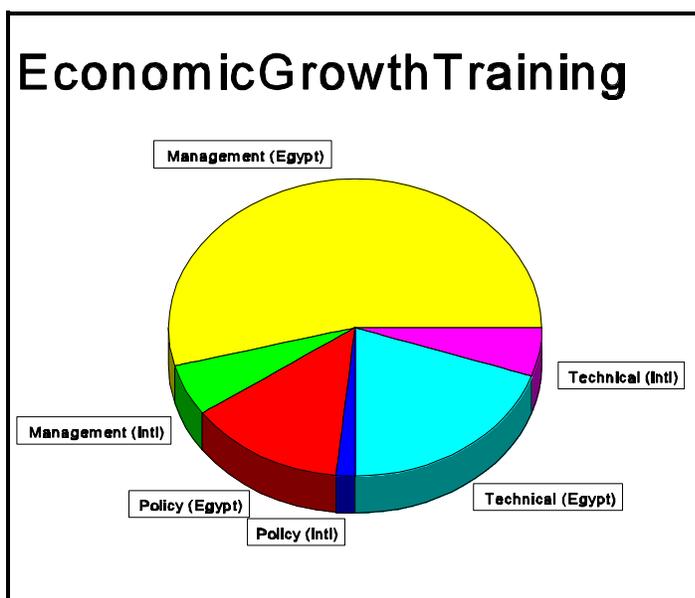
⁴⁸http://www.info.usaid.gov/procurement_bus_opp/import/

United States, and offers new training alternatives for development programs in countries like Egypt. This section will: (1) discuss recent developments in distance learning in the United States, (2) examine the demand for business/management/economics training in the USAID/Egypt program, (3) suggest approaches whereby web-based training can be introduced into training programs in Egypt; and finally (4) suggest ways in which the impending International Marketing and Management Improvement Activity can benefit from utilization of the Internet.

1. Distance Learning in the United States. One-third of American colleges and universities offered distance education classes in 1995 and another quarter planned to offer courses in the next three years. Almost 26,000 distance education courses were available, more than 750,000 students participated, and 690 degrees and 170 certificates were awarded in that year. The 1998 Peterson's Guide to Distance Learning listed 120 degrees and 455 classes in business in 1998. The Internet is becoming the preferred delivery mechanism for such training. The University of California has a joint venture with America On-Line to offer more Internet-based training from that large state public university system. Virtual universities have been established in the United States that have no physical presence in the traditional sense of a university. Private corporations are also involved in delivering distance learning; in fact 30% of all distance learning in the U.S. is provided by non-academic sources. A much fuller discussion of opportunities for web-based training in business and economics can be found in volume II of the contractors report, entitled "The Internet as a Tool to Strengthen Economic Policies" which may be found in USAID's Development Information Center.

2. The Demand for Training in Egypt. There is a great demand for training associated with USAID's program in Egypt. In January, 1997, USAID's Development Training II Program anticipated that as many as 1,500 Egyptian participants will receive training in the U.S. or third countries, and another 4,500 Egyptians will receive training supported by USAID in Egypt. However, a recently-compiled training plan, solely for those in economic growth

disciplines (including management, policy, and technical), indicates more than 9,000 trainees over the next two years; of which more than 1,100 are targeted for U.S. or third country training, and the remaining 7,900 for in-country training. A breakdown of this training plan by subject matter and location of training is found in the accompanying chart.



Given the demand in Egypt for training readily available over the Internet from the United States, there would appear to be the basis for examining ways of incorporating web-based training in the

USAID training program over the next several years.

3. An Approach to Incorporating Distance Learning There are two approaches one can follow in incorporating distance learning opportunities into USAID programs. One is to narrowly determine whether web-based training can meet some of the training needs articulated above. The second would be to engage the Government of Egypt more broadly on ways in which the explosion of distance learning in the United States can be brought to the benefit of Egypt. These are not mutually exclusive approaches, and each will be outlined below.

DT II typically carries out Training Needs Assessments of institutions identified for upgrading. To date, these TNAs have not identified situations where distance learning might be most appropriate. However, even when the initial Assessment doesn't identify distance learning opportunities, there will be special situations which arise where distance learning makes sense. Among these are:

- a. Participants requiring completion of prerequisites before attending degree programs;
- b. continuing professional education for returned participants;
- c. women who are prevented by social/cultural reasons from traveling abroad; and
- d. participants whose organizations can't spare their absence due to last minute crises.

The TNA analysis should be reexamined to determine how best to identify when distance learning makes most sense from the very beginning. Among those situations might be:

- a. Motivated individuals who have already benefited from exposure to the United States;
- b. budget considerations where savings have to be realized;
- c. individuals with duties where just-in-time learning would improve performance;
- d. opportunities to test employee motivation before investing heavily in training; and
- e. participants who lack sufficient English language scores for U.S. classroom based training programs.

The other approach would be to organize a high-level seminar with leaders in distance education in the United States to engage Egyptian educators in thinking about ways in which Egypt can benefit from the advances being made in distance education in the United States. This would allow for a discussion about accreditation and other education policy matters that bear on the acceptability of distance education in Egypt.

4. International Marketing and Management Improvement Activity USAID is about to embark on an international marketing and management improvement activity as part of its Growth through Globalization program. The purpose of this activity is to strengthen the marketing and management skills and capacity of private sector firms to increase their exports by (a) building business and university partnerships; (b) strengthening Egyptian training in international marketing and management; and (c) carrying out continuing professional development in management and marketing.

As pointed out in the concept provided, the Internet can play a role in strengthening these

programs. Among the opportunities would be to: (a) include web-based training in the information network to be established; (b) train educators on how to use the Internet to conduct applied research into the problems of international marketing and management; © allow faculty to take distance learning programs to enhance their skills in marketing and management, including the role that the Internet can play as an educational tool; (d) utilize the Internet to forge, and maintain, the global alliances envisioned; (e) ensure Internet access in selected institutions, and consider cutting back on the library development fund if funds are scarce; (f) use the distance learning center so that Egyptian professors can create Internet-based distance learning opportunities for Egyptian students; (g) incorporate short-term web-based training in the executive outreach programs; and (h) follow the example of the SABIT program in Russia that markets internship opportunities in the U.S. via the Internet.

C. Small and Micro-Enterprise Development. USAID has two small business and micro enterprise programs which are ongoing and one which is about to be launched, which could benefit from the Internet. The Small Enterprise Credit (SEC) program had been working directly with the National Bank for Development and thirteen branch offices to address short-term credit needs of small and micro entrepreneurs in the greater Cairo area. The Small and Micro Enterprise Development (SMED) program has been working with five business associations and foundations in Alexandria, Cairo, Port Said, Assiut and Shakaria to create viable credit delivery systems for small and micro enterprises. The SEC program is about to expand its lending program to the Credit Guarantee Corporation (CGC) to provide financial, technical assistance, training and other services to SMEs throughout Egypt using a national web of lending organizations including banks, non-governmental organizations and community development associations. The new web will include 7 major business associations and banks, and 40 branches to deliver lending throughout Egypt. The businesses association headquarters will also provide multiple services to these small and micro enterprises, beyond just lending.

This new initiative offers an opportunity to utilize the Internet to a greater degree than has heretofore been possible. The following applications of the Internet could be considered:

1. Institutional Networking. The Internet can permit the various banks, nongovernmental organizations and community development associations to collaborate with each other; to share information and best practices.

2. Research and Analysis. The Internet can be used for each of the partner organizations to obtain materials on small business and micro enterprise development. Much of this material presently exists in English. The Project might consider translating important papers and studies and publishing it on the Internet. Relevant databases might also be published so that researchers can analyze how the programs are faring.

3. Distance Learning. USAID/Washington is developing an Internet-based program for managers of micro-enterprise programs. This training program could be delivered to SEC partners over the web during the course of the program in Egypt. There are also a host of

small business training programs on the Internet in the United States. Some can be Arabized and adapted to conditions in Egypt.

4. **Business Applications.** The Internet can be used to market handicrafts and other goods produced by SEC beneficiaries. For example, the Alexandria Business Association is supporting a community of rug makers. Digital pictures can be made of this community and the rugs they weave, and viewers on the Internet can custom design their rugs by color and pattern. ABA can take orders, receive payment, and ensure the production and shipment of these handicrafts to their international buyers.

5. **Other Pilot Projects.** There are a host of other activities that utilize the Internet that can be tested. Information directories could be published on the web with technical information for small and micro entrepreneurs. Business laws can be published and downloaded. The Internet can be used as a conduit for advocacy for small and micro entrepreneurs.

The International Development Research Centre, of Canada, may be collaborating with IDSC to create a virtual network of donors in Egypt supporting small and micro enterprises. This affords an opportunity for the USAID SEC program to benefit from the experience of other donor SME programs.

X. MOVING FORWARD. Earlier sections discussed how to proceed with the proposed general approaches and specific applications for USAID/Egypt to better utilize the Internet to achieve economic growth objectives, and to make the Internet a more effective development tool for Egypt. This section will summarize these steps and relate them to each other. At the end of this section is a suggested timetable for accomplishing these tasks.

A. Give study wide circulation. Utilize this study to raise consciousness about how the Internet could play a useful role in strengthening economic growth programs in Egypt. Begin by sending copies and inviting comments from USAID staff, contractors/grantees, and Egyptian partners. Use the Internet to publish and disseminate the report and solicit comments as discussed above; thereby using the study itself to demonstrate a new way of doing business. Carry out this virtual exercise for two months, between November and December. By January, reach conclusions within the Mission on recommendations, based in part on this feedback.

B. Incorporate Internet in USAID's new strategy. Using the findings of this report, and the virtual discussion on the role of the Internet in Egypt, incorporate the Internet in USAID's new strategy. Form a team of USAID staff to review the strategy from the perspective of the role that the Internet can play. Hold focused sessions with strategic objective teams and partners to brainstorm how the Internet can help achieve newly-articulated objectives over the next five years. Use these groups to recommend and institute new procedures within USAID to better incorporate the Internet in project design and implementation.

C. General Approaches. Proceed to implement the general approaches as suggested above, and as may be modified by the virtual discussion. Begin with the study to support movement to private and competitive data networks. Examine the economic benefits of improved Internet services as opposed to POTS, and incorporate the findings in USAID's new strategy.

The proposed general approaches are appropriate for all USAID economic growth projects: Increasing access/awareness/mastery of the Internet, Arabization, publishing Egyptian content, creating virtual networks, and experimenting with pilot projects. Thus select one or two economic growth projects, whose managers are particularly interested in utilizing the Internet, and work with USAID's in-house team of Internet experts to design and carry out these Internet applications. Use this as an example for others in the Mission to emulate. Then systematically "wire" economic growth projects to the Internet over the next several months.

D. Specific Programs. The Private Sector Commodity Import Program can proceed almost immediately to better utilize the Internet. Incorporating distance learning in USAID's economic growth programs is centralized with the Development Training II contractor. This simplifies proceeding with web-based training. The participant training contractor can begin to assemble information on available U.S. distance learning programs as it also refines its approach to analyzing needs and opportunities in Egypt. It should be possible to enroll the first few distance learning participants over the next several months. Over time, the contractor will need to evaluate how cost effective this training has been. The proposed approach to small and micro-enterprise development program will need to proceed apace with the implementation of USAID's new lending programs with the Credit Guarantee Corporation. A strategy and plans for utilizing the Internet should be developed in the first few months of program implementation.

Time Table for Utilizing the Internet

	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Virtual Discuss	XX	XX									
Conclusions			XX								
Organize USAID				XX	XX						
Strat Formulation					XX	XX	XX				
Internet Study					XX	XX	XX				
GenApproaches					Pilot	Pilot	XX	XX	XX	XX	XX
Specifics											
PRCIP				XX	XX						
Distance Ed				XX	XX	XX	XX	XX	XX	XX	XX
SME					XX	XX	XX				

Annex A - INTERVIEWS FOR USAID/EGYPT INTERNET STUDY

USAID	Contractor/ Grantee	USG Agency	Donors	GOE and Partners	ISPs	Information Providers
Richard Brown, DIR Toni C. Wagoner, DD						
SCS Njala Khattab Gary Vaughan Jean Durette Jon O'Rourke Nancy Hardy Stafford Baker Soad Saad		Embassy: David Green, ECON/POL Natalie Reyes, Summer Intern Hanny Hamrousch, S&T	UNDP: Edmund Cain, Nadr. Hadj-Hammou, Sherif El Tokaly, and program staff GTZ: Barbara Hatour-Satow, Ahmed Shadi and others German Found- ation: Bas Auer, small biz consultant	IDSC: Raafat Radwan, CEO, and Magda Ismail RITSEC: Effat El-Shooky, Exec Dir; Tarek Kamel, Sherif Hashem, Sherif Kamel, Heba Ramzy, and Raha Rostom	InTouch: ISP Mo. El Nawawy BEC OnLine: Dr. Ehab Ahmed El- Sehrawy SofiComComun- ications: Amir Aboualam	Info Technology Advisory Group, Alex: Eng Khaled F. Nasseredin, GM Dr. Yusri Gamal, VP, Arab Academy of S&T, Alex Prof Mostafa Hassan Mostafa, Vice President of Alexandria University, and Dr. Mohamed Abangabal, Professor Computer Sciences.
SO1 Paul Deuster Magdi Khalil	CIPE: Randa Zoghby and Ibrahim Osta	USIS: Richard Boyum Hany Erian Elita Wenger Katherine Van De Vate (Alex)	OUDA: Ranya Khalifa and Dalia Hefny	Social Fund for Development: Mohamed Bakry, Manager, Plan & Info Department	Link Egypt: Khaled Galal Bhicara	Hosam Megahed, MNS
SO1 /PF Ross Bigelow Susan Riley Mervat Tawfik	IBTCI: Fred Kirschstein Arthur Anderson: George Greene Barents Group: Mark Bennet,	FCS: Hend AlSineity Hamman Nasr	World Bank: Douglas Graham, Ops Mgr, Georgette Monier, and Rufti Saley. JICA: Mr. Fuia United Kingdom: Margaret Hobbin	Capital Markets Authority: Ashraf Shamseediin Egyptian Capital Markets Assn Exec Dir, Sameh Sabbour Sherif Rafaat, Chairman, Egypt Stock Exchange	Mohamed Omram, GM, MIST Internet Alexandria: Eng Aref Makkar Data Expres, Alex: Eng Molhan Serry and Mohamed Khamis	Mohamed Megahed, Egyptian Bank Company

<p>SOI/SP Robert Weurtz Tim OHare Ingi Loftif</p>	<p>DEPRA: RRNA Contractor Stu Callison, full staff, Michelle Morgan</p> <p>EPIC: ICEG: Dr. Maisa El Gamel</p> <p>TAPR, Chemonics Intl, James Riordan, Chief of Party; Maha Schroder, Project Specialist; Sohier El Sherif, TIIA Senior Economist; and Mervat Doss, Technical Assistance to Support the Reform Activities of the GOE and Provide Management Activities</p>		<p>Swedish SIDA: Ali Sabeek</p> <p>IDRC: Dr. Iglel Rushiid</p>	<p>Ministry of Economy: Dr. Hussein Omram, Undersec Info and Statis.</p> <p>Hisham Fahmy, ECES</p>	<p>EIS, Achmed Sedky, MD, and Maged Fahmy, Publisher Cypher Magazine</p> <p>AlexNet (Alex): Eng Ehab George</p>	<p>Alli Faramawy, Microsoft</p> <p>Gen Ahmed Abdel Rahman, Vice Chair, Internet Society of Egypt, and Chair Maadi Co.</p> <p>Kompass: Josse Dorra Fiani, President and Ahmed Seif El-Din</p>
<p>SOI/ED DavidDelgado David Jessee Tarek Shata Mona Kaldas</p>	<p>Tarek Nabhan, IESC Karen Muir, IESC</p> <p>James Maxwell, ExpoLink</p> <p>Amr Mansour, Manager, BizLink AmCham</p> <p>ATUT: RONCO contractor Kelly Harrison, Ali A. El Saied, Mike Suara, Dalya Tukki and Amin Jaarin</p> <p>ACDI: John Palamucci</p> <p>AmCham Alex: Ms. Reem</p> <p>Mark Dripchak, CARE, AGREFORM</p>		<p>IFC: Laura Macanga</p> <p>EEC: Phillip Corish, Essam Tabarek, Mario Sandri, and Naha El Sayed</p>	<p>Egyptian Exporters Assn: Nader Assad</p> <p>Horticultural Export Improve-ment Assn, Amr. Tonsy and Mostafa Tawfiek</p> <p>Egyptian SmallMicro Enterprise (ESMA): Dina AbdelWahab</p> <p>ABA: Florette Makram, Mohamed Sabry, Adel B. El Sayed, Exec Dir</p> <p>Khaled Morsi, Sec Gen, Alex Comput- er and Internet Friends Assn</p> <p>Radwan Ahmed Radwan, MIS Director, Credit Guarantee Comp</p>	<p>Intl Electro Center, (IEC), Amgad Youssef</p> <p>BEC On-Line: Dr. Ehad Ahmed El- Sehrawy, Port Said</p> <p>ZakNet: Nagui Anis, General Manager</p>	<p>RITI: Sharif Kamal</p>

SO1/AP Tom Olson Ali Kamel	DAI: Max Goldensohn, COP, Edgar Ariza-Nino, and Ibrahim Siddik Gary Ender, ABT Associates SIPRE: Judy Winegar, Goans, COP, Jaleen Moroney, and Sherif Elantil IFPRI: Akhter Ahmed			Mostafa Said Ahmed, Egyptian Intl Trade Point, Ministry Trade and Supply	Hakam Kanafani, Business Development for Mohamed Mahmoud Sons Group, which owns Datum Internet Service Provider	Standard Data: Adel Danish and Alaa El Shafei
SO1/CM Robert Van Horn Art Laemmerzähl Lynn Dunn Zeinab Abel Azia (Alex)				Dr. Nabil Said, Director Intl Technology Inst.	STARNET Yasser Hassan and Mohamed Shaloot	
EI/PT Mark Silverman Raouf Youssef Fatin Mahmoud Reem Gohar	Lucent Technologies: Jerry Dropik, Karen Donahue, and Hisham Fikry GTE: John Cunningham			ESMA: Egyptian SME Assn: Dina Abdelwahab	\	
				Evette Girgas Internet Manager, MoA		
SO2 Sally Patton	Skip Ward, AED Mark Warschauer, AmidEast Steve Hanschey, AmidEast (Alex) Julie Swanson, CEPDA Jerald Sternin, Save the Children Fed.			Mounira R. El Fatawy, Lanaguage Instructor, Alex University English for SpecificPurposes Center.		

SO3 James Van Den Bos	Jean Thomas, National Council Negro Women Jim Billings, MSI, PRGP Medhaat, Develop- ment Associates, PRGP			Washdev George, Food Aid Program, Caritas-Alex		
SO4 Amani Imam Selim	Louigi Jarmillo, Pathfinder Menel El Fekki, Populatoin Council					
SO5 Mellen Tanamly Francisco Zamora Carl Abdou Rahmaan Mona Bawab Nahed Matta	Les Fishbein and Nefesa Hassan, HIS Advisors, PHR			Hala Safwat, Healthy Mother & Child, Director Info Unit General Aly, HIO MIS, Impl Coord		
SO6 Peter Argo	Dewey Bryant, Chemonics, Secondary Cities Development					
SO7 Alan Davis	KC Wolff, Chemonics, CairoAir Improvement Rigaei Said, Develop- ment Alternatives					

SPO - A Adil Gohar	John Villaume, Medez England and Assoc, University Linkages II					
SpO - B Njala Mustafa						
SpO - C	AmidEast: John Blackton Admin of Justice					
SpO - D	Winrock Intl: EPAT: Thomas Roller					
SpO - E Jennifer Notkin	Norman Goodman, Jim Grabowski, Herb Williamson, Carl Dutto and others, IIE					
MGT Beth Salamanca Soheir Ghali, Ashraf Atef Hamed and Sharir						
Totals: 48	58	9	20	31	17	13

Annex B

Annex B Annotated Bibliography

Towards More Efficient Telecommunications Services in Egypt, Policy Viewpoint No. 2, Egyptian Center for Economic Studies, January 1998. This paper describes the reforms and performance of Telecom Egypt and compares that with other countries. It concludes that Telecom Egypt has done well over time but that Egypt could do much better with further reforms.

Information Technology in Egypt, Issues and Opportunities for USAID/Cairo, Gary Vaughan, June 21, 1998. This discussion paper makes the case that USAID/Cairo should initiate a special objective in information technology to promote the information technology sector as a key building block to sustainable economic growth. While it goes beyond the Internet, the paper is a very useful starting point to understand the role that information and communications technologies play in the USAID program in Egypt.

Telecommunications Development in Egypt, the American Chamber of Commerce in Egypt, The Business Studies and Analysis Center, December 1997. This research paper seeks to identify investment opportunities for private firms in the Egyptian telecommunications market, with an emphasis on the changes taking place in terms of technology, regulation and market structure. It compares the Egyptian experience with that of Chile and the United Kingdom, and recommends changes required for a more efficient telecommunications system.

Telecommunications Sector Support Project, USAID Grant 263-0223, Second Memorandum of Understanding, September 23, 1997. This agreement between USAID and the Government of Egypt presents a telecommunications policy reform matrix which outlines undertakings of Arento (now Egypt Telecom) through the year 2001 and a vision of the telecommunications market evolution through the year 2002.

Scope of Work, Economic Assessment, Electric Power and Telecommunication Sectors, USAID internal document, undated. This scope of work calls for an economic evaluation of USAID's involvement in Egypt's telecommunications sector. Work is expected to begin shortly.

USAID Privatization Project Semiannual/Quarterly Reviews, for the period 1 January to 30 June 1998. International Business and Technical Consultants, Inc. Evaluation Services Contract. This report describes the efforts by the Government of Egypt to privatize telecommunication services in Egypt. It provides a frank assessment of performance.

Paving the Road for Egypt's Information Highway, by Sherif Hashem, manager, Egypt's Information Highways Project, and Tarek Kamel, manager, Communications Department, IDSC/RITSEC, from Proceedings of the first Kuwait Conference on the Information Highway, March 1998. This presents an overview of the evolution of the Internet services in Egypt and efforts to create an Egyptian information highway. Issues related to developing infrastructure and the information content are outlined.

The Evolution of Internet Services in Egypt: Towards Empowering Electronic Commerce, by Sherif Hasem, Manager, IDSC/RITSEC, and Magda Ismail, Assistant Manager, IDSC/RITSEC, September 1998 paper presented at the Global Marketplace for SMEs, Manchester '98. This paper provides both the evolution of the Internet in Egypt and how it is being utilized in various sectors. Electronic commerce challenges and opportunities for Egypt are also discussed.

Lost in Cyberspace, by Alison C. Hills, Egypt Today, February 1997. This article describes the Internet in Egypt, and highlights major companies providing Internet services.

Internet Commercialization in Egypt: A Country Model, by Tarek Kamel, IDSC/RITSEC, found on-line at <http://www.isoc.org/isoc/whatis/conferences/inet/97/proceedings/E6/E6-2>. HTM This paper describes the evolution of the Internet in Egypt from its academic origins to its commercial takeoff. It provides lessons learned, opportunities and challenges.

Internet Services Providers in Egypt -- Market Research Report (IMI970518) of 1997 and 1998 by Hend El Sineity, Commercial Counselor, U.S. & Foreign Commercial Service, Cairo, Egypt. This commercial report describes the evolution of the Internet in Egypt, and lists Internet service providers.

Internet Society of Egypt Home Page, <http://www.ise.org/gateway.htm>. This comprehensive home page provides a history of the Internet in Egypt, a list of Internet service providers and costs, a chart describing the Internet gateways in Egypt, and useful links to other Egyptian content.

“Deals in Cyberspace” by Hadia Mostafa, Business Today Egypt, September 1998. This article reviews the growth of electronic commerce in the United States and compares it with ecommerce in Egypt. It also identifies key issues which must be resolved in Egypt before ecommerce can become more significant.

The Emerging Digital Economy, U.S. Department of Commerce, April, 1998. A comprehensive, two-volume review of the movement of business into digital form conducted for the U.S. Government.

“Doing Business in the Internet Age”, Annual Report on Information Technology, Business Week, June 22, 1998. A feature story of how the world of business is being transformed by electronic commerce.

“PC Equipment and Accessories”, Industrial Sector Analysis, U.S. & Foreign Commercial Service, 1998. A thorough analysis of the personal computer market in Egypt, which is helpful in predicting potential growth of the Internet in Egypt.

“Hands on Donors”, PC World Egypt, September 1998. This article describes a number of

donor efforts to make better use of computers and the Internet. USAID's IELP II program is featured.

"Donor Activities in Egypt: An Assessment" by SRI International, April 1998. This report both lists and describes donor activities focusing on private sector and export development. It is a useful departure for those seeking to work in these areas, and recommends a web-based coordination initiative.

"RITSEC Global Campus Initiative", 1998. A program description of RITSEC's approach to promoting web-based training in Egypt.

"Information Technology Strategy for Egyptian People's Assembly", by Research Triangle Institute, April 18, 1998. A proposed plan to build a strong information technology foundation in Egypt's parliament. It incorporates both Internet and Intranet approaches, and seeks to improve access to important internal and external information for members and their staffs.

"Preliminary Assessment of the Egyptian Software and IT Services Export Business", Jim Maxwell, Cargill Technical Services, March 26, 1998. This report, in outline form, provides an overview of opportunities for Egypt to export software development and information technology services.

"Software Companies in Egypt - 1997" by the Cabinet Information and Decision Support Center. This directory profiles Egyptian software companies, software packages, companies/products, and Internet service providers.

"Surfing the Web in Arabic" by Ehab Heikal, PC World Egypt, June 1998. This article reviews Arabic web sites available for Egyptians and how to access them using Arabic enabling browsers.

"Degrees On-Line" by Azza Khattab, Egypt Today, September 1997. This article discusses the City University program for distance education in Egypt.

"The Right Connections: Egyptian Schools Go On-Line" by Firas Al Atrachi, Business Monthly January 1998. This is a brief survey of Egyptian efforts to introduce the Internet into education.

"Cainet '98" by Ehab Heikal, PC World Egypt, June 1998. A brief review of Cainet '98.

"E-Mail in Arabic", by Douglas Bell, PC World Egypt, June 1998. A review of how to email in Arabic.

"Global Networking" by Firas Al-Atrachi, Business Today, May 1997. A survey of how Egypt has fared in its drive towards globalization and having a web presence.

Project/Contract/Grant	Research Analysis	Pub Trans & Advoc	Profes Network	Instit Network	Distance Consult	Distance Learning	Region Net	Biz Apply	Home Page
EPAT (Winrock)	Y	Y	Y	Y	Y	N	N	N	N
SpO - E									
DT II	Y	N	N	N	N	P	N	N	N
Totals:									
Yes:	31	7	16	17	4	0	2	6	10
No:	5	27	15	16	34	35	35	28	15
Planned:	3	5	8	6	1	4	2	5	14

Notes: Y: Yes; N: No; P: Planned

Annex D ACRONYMS

ACDI	Agriculture Cooperatives Development International
AmCham	American Chamber of Commerce
AmidEast	American - Mideast Educational and Training Services
APRP	Agricultural Policy Reform Program
ATUT	Agricultural Technology Utilization and Transfer
BizLink	Business Link
CAINET	Cairo Internet Conference and Exhibition
CAPMAS	Central Agency for Public Mobilization and Statistics
CEPDA	Center for Development and Population Activities
CGC	Credit Guarantee Corporation
CIPE	Center for International Private Enterprise
CMA	Capital Market Authority
DEPRA	Development Economic Policy Reform Analysis
DT II	Development Training II
ECES	Egyptian Center for Economic Studies
ECMA	Egyptain Capital Markets Association
EEC	European Economic Commission
ENSTINET	Egyptian National Science Technology Information Network
EPIC	Egyptian Policy Initiative Consortium
EUN	Egyptian Universities Network
FTP	File Transfer Protocol
FX	Foreign Exchange
GSM	Global System for Mobile Communications
GTZ	German Technical Cooperation
IBTCI	International Business and Technology Consultants
ICEG	International Center for Economic Growth
IDRC	International Development Research Center
IDSC	Egyptian Cabinet Information and Decision Support Center
IELP	Integrated English Language Program
IESC	International Executive Service Corps
IOSCO	International Organization of Securities and Capital Market Organizations
ISP	Internet Service Provider
ITS	Informaton Technology Solutions
JICA	Japan International Cooperation Agency
kps	kilobytes per second
LE	Egyptian Pounds
MIST	Misr Information Services and Trading
MTC	Manufacturing Technology Center
NCNW	National Center for Negro Women
NGO	Non Governmental Organization
OU DA	Operational Unit for Development Assistance

POTS	Plain Old Telephone Service
PRCIP	Private Sector Commodity Import Program
PRGP	Participatory Rural Governance Program
PVO	Private and Voluntary Organization
RITSEC	Regional Information Technology and Software Engineering Center
SCS	Office of Strategy Coordination and Support
SEC	Small Enterprise Credit
SEC	Securities and Exchange Commission
SIDA	Swedish International Development Cooperation Agency
SIPRE	Strengthening Intellectual Property Rights in Egypt
SMED	Small and MicroEnterprise Development
TAPR	Technical Assistance to Support the Reform Activities
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
USAID	United States Agency for International Development
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network
WIPO	World Intellectual Property Organization
WWW	World Wide Web