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ASSISTANCE TO THE ARMENIAN INFORMATION COMPANY (ARMINCO)

SI/ARM/95/801

THE REPUBLIC OF ARMENIA

Technical report: Strengthen the capacity of the Armenian Information Company (ARMINCO) to provide information services to small and medium enterprises (SMEs)*

Prepared for the Government of the Republic of Armenia
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

*Based on the work of Julie Carpenter, consultant in design
and establishment of information services*

Project Manager: J. Pavlik, Industrial Information Section

United Nations Industrial Development Organization
Vienna

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ABBREVIATIONS

AFSME	Armenian Foundation for Small and Medium Enterprises
ARMINCO	Armenian Information Company
AIUG	Armenian Internet Users Group
BCC	Business Communications Centre
BITS	Business Information and Technology Services (project proposal)
CIS	Commonwealth of Independent States
FSU	former Soviet Union
FT	Financial Times
GUI	graphical user interface
INTIB	Industrial and Technological Information Bank (operated by UNIDO)
LAN	local area network
NFP	national focal point
NGO	non-governmental organization
SMEDA	Armenian Foundation for Small and Medium Enterprises
SMEs	small and medium enterprises
TACIS	European Union Technical Assistance for the CIS programme
TOR	terms of reference
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
UUCP	communications protocol
VSAT	very small aperture terminal (satellite facility)
WWW	World Wide Web

ABSTRACT

This is the Consultant's report for the Project SI/ARM/95/801/11-51 to Strengthen the capacity of the Armenian Information Company (ARMINCO) to provide information to small and medium enterprises (SMEs). This report has been written following a two week visit to Armenia (20 October - 3 November 1995) by Julie Carpenter, Consultant in design and establishment of information services for SMEs.

The original TOR needed modifying to include the task of drafting a project proposal, expanding and developing ARMINCO's capacity to provide business information services to SMEs, in response to a request from UNIDO.

A number of visits and meetings were undertaken by the Consultant and Dr Saghian in order to establish what data on SMEs and development trends exists in Armenia; which organizations are currently working to support SME development and their precise roles; what development policies and priorities inform the activities of government, non-governmental organizations (NGO) and foreign organizations in this area.

ARMINCO was founded in 1992. It is a private company managing 2 Internet domains and providing 3 major e-mail and online services. ARMINCO has over 300 users of its services, including international organizations, government organizations, foreign embassies and private sector companies.

The availability of business information is severely limited in Armenia. SMEs and development in all sectors are further constrained by high costs in telecommunications; poor and inadequate telephone links; access to e-mail, data transmission facilities and Internet sources is inhibited by high costs and lack of capacity; lack of skills in and understanding of the potential of telematics in commercial and other development.

A Project Proposal -Business Information and Technology Services (BITS) - was prepared by the Consultant and ARMINCO, in consultation with the local UNDP office, government and other organizations, which addresses the following issues:

- * The need for expanded telecommunications and network capacity in Armenia to provide reliable and affordable access to the Internet other electronic information sources and e-mail facilities.
- * Appropriate computer and telematics hardware and software facilities are required to enable SMEs to access and search electronic business information sources.
- * Expert guidance is essential for SMEs in accessing and searching business information sources on the Internet and other electronic sources.
- * The services of expert information intermediaries are required, to respond to requests for business and market-related information, to search and select from available Internet and other electronic information sources.

- **Training and skills development opportunities for managers and staff of SMEs in using telematics applications and using basic software applications are essential in the medium term.**
- **English is the language of the Internet: training and skills development for SMEs in Business English and English language and terminology related to telematics applications are also required.**

This proposal is annexed to the Consultant's report.

SUMMARY OF RECOMMENDATIONS

- 1 A full needs assessment and analysis of the sector will be a necessary part of any project to develop effective business information services.
- 2 If ARMINCO is to begin providing business information services, using Internet sources, or providing guidance to SMEs on where to find useful information on the Internet, staff must receive on-the-job training in, and become very familiar with, the content, quality, relevance and organization of key business information sources.
- 3 In information access and provision particularly, the transition among SMEs to full capability in exploiting telematics applications should be a priority for support among foreign and domestic development agencies.
- 4 ARMINCO will need to ensure that information technology training, and other activities which can generate revenue, do not absorb too much staff time and BITS Centre facilities, to the detriment of the legitimate information and training services in support of SME development.
- 5 The negotiation/finalization of the BITS Project Proposal should include the requirement on the part of ARMINCO to produce a human resources planning document.
- 6 The training element proposed in the BITS Project Proposal should be regarded as flexible, and should be amended/expanded to suit the requirements of the staff selected for the post.
- 7 The Consultant strongly recommends the ARMINCO Technical Director as a potential consultant in telematics applications, network development and Internet related services.

INTRODUCTION

This is the Consultant's report for the Project SI/ARM/95/801/11-51 to Strengthen the capacity of the Armenian Information Company (ARMINCO) to provide information to small and medium enterprises (SMEs). This report has been written following a two week visit to Armenia (20 October - 3 November 1995) by Julie Carpenter, Consultant in design and establishment of information services for SMEs. The Terms of Reference (TOR) for the Consultant are attached to this report as Annex 1.

On arrival in Armenia, and in initial discussions with the Technical Director of ARMINCO, Dr Gregor Saghian, it became clear that the original TOR needed modifying to include the task of drafting a project proposal, to expand and develop ARMINCO's capacity to provide business information services to SMEs, in response to the indication from UNIDO that they had identified a potential foreign donor to fund UNIDO sponsored assistance to SME development. The Consultant, therefore, agreed with ARMINCO that on-the-job training in using Internet business information databases (TOR 2) would be premature at this stage, and that the preparation of a draft project proposal should take precedence.

A number of visits and meetings were undertaken by the Consultant and Dr Saghian in order to establish the following:

- * what data on SMEs and development trends exists in Armenia;
- * which organizations are currently working to support SME development and their precise roles;
- * what development policies and priorities inform the activities of government, non-governmental organizations (NGO) and foreign organizations in this area.

The list of individuals visited is attached as Annex 2.

Project proposal draft 1 and 2 are attached as Annexes 4 and 5. The Consultants recommendations are highlighted in bold in the text of this report.

1 ACTIVITIES AND OUTPUTS

1.1 The situation at outset

The following paragraphs outline the current situation in Armenia with regard to the current status and role of ARMINCO, the development of the SME sector and current communications constraints on development. This information was gathered through a series of visits and interviews in Yerevan and from the UNDP Human Development Report for Armenia¹.

1.1.1 ARMINCO: current role and capabilities

ARMINCO was founded in 1992. It is a private company managing 2 Internet domains and providing 3 major services: a menu-oriented online information service with global e-mail, Usenet Newsgroups, Internet resources such as Telnet, WWW and Gopher; an offline e-mail service using UUCP; access to the full range of Internet facilities by providing an IP connection to separate hosts or networks. ARMINCO has more than 300 users of its services, including international organizations, government organizations, foreign embassies and private sector companies.

It is the National Focal Point (NFP) of the RINSE UNESCO network; the designated NFP for UNIDO's INTIB database, and has been nominated by UNESCO as the national telematics applications information service in a 3 year project proposal for funding from the European Union Telematics Applications Research and Development Programme: the project will be called STACCIS - Support for Telematics Applications Cooperation with the CIS.

ARMINCO currently operates out of premises in the State Long Distance Telephone Company building in Republic Square, and other centrally-located offices in the building of Armenpress, where office and working space is cramped, though likely to be extended in the near future.

ARMINCO has a steadily growing business base and a leading market position in the provision of commercial telecommunications and information technology (telematics) services in Armenia. They have good managerial and technical staff resources, though the pool of technically qualified and trained personnel - especially in the rapidly changing fields of telecommunications and international information networks - from which ARMINCO may find new and replacement staff is small.

Most academic and government institutions are still dependent on computer hardware and software systems developed in the former Soviet Union (FSU), most of which are underpowered, do not conform to international standards and are not compatible with the rapidly developing client/server and Graphical User Interface (GUI) applications developed in the USA and Western Europe.

¹ Human Development Report: Armenia 1995, Yerevan 1995. Written by a team of Armenian experts coordinated by Dr Alexander Agabekian, under the sponsorship of UNDP and the Government of Japan.

ARMINCO staff are very familiar with information sources easily accessible and available through WWW sites on the Internet, and with the technical problems associated with searching for information using other Internet services such as Gopher. They are less familiar with the actual content, quality and relevance of the information sources, since they do not make extensive use of these sources as yet.

X25 protocol databases, such as those provided by the international commercial database host services DIALOG and DATASTAR, and the increasing use of CD-ROMs in database creation and use, are also familiar territory to ARMINCO staff.

1.1.2 Business information services in Armenia

The availability of business information is severely limited in Armenia:

- there are no up-to-date and effective library and information services operating in the field of commercial and business information. Technical and scientific libraries in the academic and research sector are either non-existent or extremely run down and out of date, lacking all but the most rudimentary information technology facilities.
- There are no commercial information brokers or market research services operating in business fields.
- The Armenian Foundation for Small and Medium Enterprises (AFSME or SMEDA) and Business Communications Centre (BCC) services, funded by the European Union TACIS programme, provide limited information seeking and gathering facilities only as part of a wider package of consultancy and training support (for instance, BCC subscribes to the Kompass company and marketing database on CD-ROM, but it is rarely used).
- Only Trade Point Armenia currently offers access to one of the many international databases of technical and business opportunity information produced and maintained by the international organizations (eg. UNIDO's INTIB, the European Union ECHO and CORDIS databases).

1.1.3 Communications and SMEs

Armenia, as a landlocked country, is largely dependent on railways and gas pipelines which pass through the territories of neighbouring countries. The blockade resulting from the Karabagh conflict, and the unstable political situation in Georgia have severely interrupted communications and the movement of goods and trade in and out of Armenia and contributed to a continuing energy crisis. The current production of electricity is not sufficient to meet the country's needs and rationing of domestic power supplies is in place.

SMEs and development in all sectors is further constrained by

- high costs in telecommunications
- poor and inadequate telephone links
- access to e-mail, data transmission facilities and Internet sources inhibited

- by high costs and lack of capacity
- lack of skills in and understanding of the potential of telematics in commercial and other development.

1.2 SME development in Armenia

Accurate data about the current situation in enterprise development and the growth of SMEs is almost non-existent in Armenia. Relevant Government data exists in different Ministries - for instance, all private sector enterprises must register and receive a licence to trade - but it is held in a variety of inaccessible computer and written files, unamenable to easy analysis. A profile, therefore, of the SME sector - trends, growth, areas of production and trade, markets etc - is almost impossible to produce at this time. **A full needs assessment and analysis of the sector will be a necessary part of any project to develop effective business information services.**

1.2.1 Government policies and development priorities

The development of SMEs and private enterprise generally is demonstrably a high priority for government and for the principal foreign aid and development agencies operating in Armenia. The government is reforming the structure of production and professional skill development. Current plans are to privatise 52% of trade enterprises, 62.7% of food producing enterprises and 60% of service enterprises. According to existing programmes, by 1996, the private sector share in the economy will be at least 42%.

Foreign investment in Armenian enterprises is being sought and actively encouraged by Government: to date 120-130 joint ventures are up and running; mainly trade enterprises. There is a need to obtain similar investment in the industrial and production sectors.

1.2.2 Sectors and markets

It is estimated ² that 15% of all private enterprises are in the production sector, 20% in the agricultural sector and 65% are service and training enterprises. Annex 3 gives AFSME's analysis and the list of their current clients.

According to the BCC, Armenian enterprises have competitive advantages in export markets in electrical components, computer software, medical devices and appliances, chemical products, machine and machine-tool manufacture, textiles and certain consumer products. The pre-1991 markets for these goods were mainly the Soviet Union and other Communist-bloc countries. The markets in Russia and the CIS remain important but Armenian entrepreneurs are seeking other export markets in the West, in the central Asian region and the Middle East.

1.2.3 Business information needs among SMEs

It is anticipated that, as SMEs in Armenia develop export potential and interest in

² from notes provided by AFSME based on AFSME experience and statistics provided by the privatization committee. See Annex 3.

external markets, the demand for accurate and up-to-date information will increase. Based on experience in Western Europe and in other transitional economies (eg. China) the following kinds of business information are likely to be sought:

- * suppliers/sourcing
- * marketing information and market research
- * finance assistance availability
- * other financial information, such as international commodity prices
- * competitors
- * standards
- * environmental legislation
- * export information
- * technical developments
- * innovations
- * business start-up information
- * local economy and local business information.

In addition, it seems likely that a wider range of more general information and data, for no local sources exist, will be of interest and use to enterprises in Armenia.

For instance, whereas in Western Europe companies and individuals take for granted the easy access, through libraries, bookshops, periodicals, the press and broadcasting media, to information on the economic, social and commercial situation in most countries, such information is extremely hard for the majority to find in Yerevan. Access to the Internet and satellite television networks (eg. CNN) provides, for the minority, the opportunity to overcome these information gaps, and can be more effectively and widely exploited.

1.2.4 Business information sources on the Internet

The diversity and volume of business, economics and market-related information available on the Internet are increasing. Some commercial and government information providers (eg. US Statistical Bureau, FT Profile, Dunn & Bradstreet) have WWW home pages which lead the information seeker on to quite comprehensive databases and text-based sources.

Access to library catalogues, directories and international organization databases (eg. the UN databases, the European Union's CORDIS) is also possible through WWW or Gopher sites. Most information can be accessed *gratis* or for a modest registration fee (eg. US\$20).

The problems associated with business information sources on the Internet can include:

- * lack of quality control or authentication of information and data;
- * most financial, company and statistical data is not up-to-date: whereas the commercial database providers (eg. Dunn & Bradstreet) update their online and CD-ROM databases regularly and constantly, their Internet sources are not subject to this process;

- * only outline information may be available *gratis*; the important data, such as company turnover, contact names and addresses, will usually require credit card payments to gain access;
- * the wide range and diversity of origin of information sources and providers means that it is difficult, in the absence of any comprehensive indexes or (non-entertainment) directories to the Internet, to track down useful sources.

The Consultant provided ARMINCO with some directorial information about potentially useful sources of business information and discussed strategies for overcoming some of the problems. If ARMINCO is to begin providing business information services, using Internet sources, or providing guidance to SMEs on where to find useful information on the Internet, staff must receive on-the-job training in, and become very familiar with, the content, quality, relevance and organization of key business information sources. This will require a considerable investment of staff time and online time.

1.2.5 CD-ROM databases

The Consultant provided ARMINCO with an up-to-date copy (on CD-ROM) of the international directory CD-ROMs in print published by Meckler Media. This lists (among most other subjects) the major international business and marketing information databases on CD-ROM. Annex 7 provides a recommended priority list for consideration.

1.3 Telematics issues

The current telecommunications links between Armenia and the outside world are as follows:

- * through Russia, with a 1,000 channel terrestrial cable passing through Georgia and the Ukraine;
- * through a satellite communications link (AT&T) with 150-200 channels with the USA and Western Europe;
- * in addition, a terrestrial link of approximately 30-40 channels to the Islamic Republic of Iran has been established and is operational.

There are also independent or private satellite links (eg. the Yerevan Physics Institute, several foreign embassies and companies) which cannot be used for commercial purposes.

Three organizations in Armenia currently deal with data transmission using the existing telecommunications infrastructure:

- * The Armenian Internet Company (ARMINCO) is a private sector provider of access to the Internet and e-mail facilities: it leases a satellite communication channel from Sovam-Teleport (a Russian-USA joint venture);
- * INFOCOM (Ministry of Communications) services a commercial data transmission network using the X25 protocol and leasing a satellite communications link with the SPRINT network. Its main users are banks.
- * Yerevan Institute of Physics leases a communication line in the Raduga satellite of the Russian Defence Ministry; it is connected with the computing centre of DESI in Germany and provides services to scientific institutions only.

1.3.1 Government policies and development priorities

State policy on telematics and information provision has not yet been defined: the Ministry of Information was created in September 1995 and appears to be principally concerned with the press and other media.

The Ministry of Communications issues and renews licences for setting up and operating data transmission networks and preserves to itself the monopoly for commercial data transmission using X25 protocol (INFOCOM) and to the Armenia-USA joint venture ARMENTEL for telephone communications development. A government/joint venture initiative to provide 150,000 telephone users in Yerevan with fibre optic cable lines was recently announced in the press.

1.3.2 Current constraints

Given the inadequacy and poor state of the local and international terrestrial telecommunications infrastructure - landlines within Yerevan and throughout the rest of Armenia are in a bad state of repair - the demand for e-mail facilities and access to the Internet is rising, despite the costs, particularly among government agencies, NGOs and foreign organizations in Armenia. The main constraints on wider and more affordable provision are:

- * insufficient capacity in the existing satellite links to accommodate significant increases in users and volume of data transmission, and the lack of back-up links;
- * dependence on telecommunications links through Russia and regional conflict zones;
- * dependence on the use of Russian military satellite channels which may be periodically taken over for military use;
- * e-mail facilities provide a more efficient means than the telephone of communicating within Armenia as well as with the outside world; however, the domain and name server for Armenian e-mail is currently located in Moscow; messages across Yerevan are therefore routed via Moscow, increasing costs and clogging up existing data transmission channels.

1.3.3 Future development of telematics capacity among SMEs

There is no doubt that information technology and telematics applications will be of considerable importance to existing and emerging SMEs in Armenia. Given the country's relatively isolated state, and the nonetheless wide international, business and other contacts with the Armenian Diaspora, the significance of reliable telephone and data transmission networks is obvious. As computer and telecommunications hardware prices fall internationally SMEs will invest in information technology in order to be able to "leapfrog" over the continuing Western reliance on and use of printed information sources and paper-based business transactions.

In information access and provision particularly, the transition among SMEs to full

capability in exploiting telematics applications should be a priority for support among foreign and domestic development agencies.

1.3.4 ARMINCO's role

ARMINCO's present role as a provider of e-mail and Internet services is *de facto* a combination of

- * technical services
- * systems management
- * technical problem solving for clients
- * training and advice in e-mail and Internet access
- * advice and problem solving for clients in basic computer hardware and software applications use
- * provision of advice and expertise on request on a wider range of telematics and information access issues.

Because computer hardware and software are relatively rare, or very new, acquisitions in government, public sector and commercial organizations, the skills base in using computers, basic software (eg. MS-DOS, Windows) and applications (eg. word processors, spreadsheets) is small and opportunities for individuals to acquire these skills are limited in Armenia. ARMINCO has established a reputation for expertise in this area; the demand for their services and advice almost exceeds their current capacity.

1.4 UNDP and regional development priorities

UNDP activities in Armenia are to be an integral part of a CIS regional development strategy, in which the exploitation of telematics applications and the development of SMEs are among the highest priorities for investment and cooperation.

1.5 Project proposals: Business Information and Technology Services in Armenia

The Consultant prepared, in collaboration with ARMINCO, a draft project proposal Business Information and Technology Services (BITS) project (Annex 4) which was discussed with staff in the Foreign Aid Coordination Centre of the Ministry of Economy, AFSME and UNDP.

Staff at UNDP noted that the Draft Project Proposal matched several of the priorities for development and investment agreed with other CIS local UNDP offices in a recent regional meeting in Tbilisi, Georgia. They suggested to the Consultant and ARMINCO that, if the project proposal were expanded and reoriented slightly, UNDP would consider participating on a cost-sharing basis. The Consultant understood that UNDP's specific contribution was likely to be the provision of VSAT satellite access and NASA telecommunications channel use.

The Project Proposal was then redrafted in UNDP/UNIDO format (Annex 5). A copy was submitted to the UNDP office before the Consultant's departure from Armenia.

1.5.1 Issues addressed

The issues, identified by ARMINCO and the Consultant, which the Project Proposal should address included the following:

- The need for expanded telecommunications and network capacity in Armenia to provide reliable and affordable access to the Internet, the government's X25 network and other electronic information sources (eg. INTIB), and e-mail facilities in support of business and enterprise development.
- Appropriate computer and telematics hardware and software facilities are required to enable existing and emerging SMEs, currently lacking their own facilities, to access and search electronic business information sources.
- Expert guidance is essential for SMEs in accessing and searching business information sources on the Internet and other electronic sources.
- The services of expert information intermediaries are also required, to respond to requests for business and market-related information, to search and select from available Internet and other electronic information sources, and to provide business information services specifically tailored to the needs of Armenian SMEs.
- Training and skills development opportunities for managers and staff of SMEs in using telematics applications, in searching for business information on the Internet and other electronic sources, and in using basic software applications in support of business and enterprise development are essential in the medium term.
- English is the language of the Internet: training and skills development for SMEs in Business English and English language and terminology related to telematics applications are also required if SMEs are to exploit new technologies and sources of information in support of business development.

1.5.2 Cost recovery and sustainability

Considerable thought was given to ensuring opportunities for cost recovery in the preparation of the Project Proposal; on the assumption that the BITS Centre must be financially sustainable at the end of the proposed three year project.

Even in Western Europe, commercial enterprises and other business organizations have only recently been persuaded that quality information in support of business development is a commodity which must be paid for. It is unlikely that, in the short to medium term, charges can be levied for the proposed BITS Information Services which would cover costs of service delivery. Other areas of opportunity for revenue earning exist, however, without compromising the BITS Centres ability to deliver business information services:

- short training courses for individuals, groups and enterprises in computer use and basic software use;
- training sessions and courses in access information on the Internet;
- training courses in effective use of office and business applications, such as spreadsheets;
- specialist English language training courses; regular programmes and courses tailored to suit SME needs.

ARMINCO will need to ensure that information technology training, and other activities which can generate revenue, do not absorb too much staff time and BITS Centre facilities, to the detriment of the legitimate information and training services in support of SME development.

2 CONSTRAINTS ON THE DEVELOPMENT OF NEW SERVICES

ARMINCO is well-placed and well-connected to manage the proposed BITS Project, especially in cooperative partnership with the State Engineering University and with the support of UNIDO. There are three possible areas of constraint:

2.1 Telematics equipment and capacity

Arminco does not have the capacity at present to expand its services to the commercial and SME sector on the scale required for effective development of the sector. Specifically, investment in telematics equipment (telecommunications installations, computer and networking hardware, etc) and in telecommunications channel rental (satellite channels routed to USA or Western Europe) is required. This investment is beyond the financial capacity of ARMINCO itself and cannot be achieved without external funding support.

2.2 Human resource provision

Staff at ARMINCO are currently overstretched: if they are to expand their services and capabilities as proposed in the BITS Project proposal, and to take on a third physical location in Yerevan, they may face problems in identifying and recruiting sufficient, qualified or experienced staff - technical, clerical and other support - to be able to manage the Project effectively.

The negotiation/finalization of the BITS Project Proposal should include the requirement on the part of ARMINCO to produce a human resources planning document, which will indicate

- * how the proposed BITS Project personnel will be incorporated into the existing ARMINCO structure;
- * what support - technical and clerical - staff ARMINCO will provide, from existing ARMINCO staff, and at each location;
- * which staff will fill which posts;
- * which posts must be filled by newly recruited staff, and how that recruitment will be effected.

2.3 Information service provision

A particular problem is anticipated in filling the BITS Information Manager post (see Annex 6). In Western European terms this should be filled by a person with Information Science qualifications and some years experience of working within a library or information service, where the full range of information sources (printed books and serials, CD-ROM databases, online information services and Internet access) are used.

A person with this background and experience will be hard to find in Yerevan. Staff from existing library services will have had little or no exposure to information technology; they will also come from a more traditionally "reactive" library environment, unsuitable for the management of an essentially "proactive" business information service.

A compromise solution may be found in appointing a person from a scientific, public sector or commercial background, with a sound knowledge of using computers and information technology, for whom more extended training in developing and managing business information services could be provided.

The training element proposed in the BITS Project Proposal should be regarded as flexible, and should be amended/expanded to suit the requirements of the staff selected for the post.

3 CONCLUSIONS

3.1 Regional model project

From discussions with ARMINCO and UNDP it seems likely that the BITS Project Proposal could become a model - subject to amendment and adaptation - project for other CIS countries, which share the following characteristics to a greater or lesser extent:

- * transitional economies with SME development a high priority;
- * strong business and service links with Russia remain;
- * poor communications infrastructures, especially telecommunications;
- * underdeveloped and, now, severely under-resourced library and information services; with none capable of or focused on serving the business development needs of SMEs;
- * the opportunity to exploit telematics applications (including e-mail and access to the Internet) to "leapfrog" infrastructural development gaps.

3.2 ARMINCO as consultants

In this situation, ARMINCO could provide invaluable consultancy and expertise services to UNIDO and UNDP project activities. **The Consultant strongly recommends the ARMINCO Technical Director as a potential consultant in telematics applications, network development and Internet related services.**



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Project for the Republic of Armenia

JOB DESCRIPTION

SI/ARM/95/201/11-51

- Post title:** Consultant in design and establishment of information services for SMEs
- Duration:** 0.5 m/m
- Date required:** As soon as possible
- Duty station:** Yerevan, Armenian Republic
- Purpose of the Project:** To strengthen the capacity of the Armenian Information Company (ARMINCO) to provide information services to small and medium enterprises (SMEs).
- Duties:** The consultant will be attached to ARMINCO and will work under the general guidance of the national co-ordinator. The consultant will specifically be expected to:
1. Advise on design and establishment of information services for SMEs;
 2. organize on-the-job training on using INTERNET for retrieving industrial and business information from remote databases;
 3. advise on purchase of CD-ROM databases relevant to the information needs of the entrepreneurs in SMEs and on latest information services offered through INTERNET.
- The consultant will be expected to prepare a technical report setting out the finding of his mission, together with recommendation to the national counterpart agency on future action which might be taken.
- Qualifications:** University degree or equivalent in information services with considerable experience in organizing such services for SMEs and use of INTERNET for searching remote databases
- Languages:** English, Russian an asset

INDIVIDUALS AND INSTITUTIONS VISITED BY THE CONSULTANT

Dr Gregor Saghian, Technical Director, ARMINCO
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Mr Shiraz Kirakosian, Deputy Minister, Ministry of Economy

Rouzanna Tarverdian, Executive Director, Foreign Aid Coordination Centre,
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Mr Anatole Cheeboukhchian, National Counsellor, Business Communication Centre

David Akopyan, Programme Officer, UNDP Armenia
Victoria Ter-Nikogossian, National Adviser, UNDP Armenia

The SME-sector in Armenia.

Information about the breakdown by number of employees and the percentage breakdowns of different sectors of industries according to private and Governmental ownership. All the information stated below is obtained according to AFSME experience and statistics provided by privatisation committee. Since there is not statistical data available about this issue the below mentioned information has some subjective character. And the information about number of enterprises is provided by the State Register of ROA.

PRIVATE SME SECTOR

% of production enterprises in whole private sector	% of agricultural enterprises in whole private sector	% of service providing businesses and training in whole private sector
15 %	20 %	65 %

GOVERNMENTAL SECTOR (s&m, big enterprises)

% of production enterprises in whole Governmental sector	% of agricultural enterprises in whole Governmental sector	% of service providing businesses and training in whole Governmental sector
62 %	25 %	13 %

Enterprises	Total number of enterprises	Number of employees
Private entities		
Sole proprietorship	2007	2-10
of those in agricultural sector	32	3-7
Home-based private entities	210	1-5
of those in agricultural sector	12	3-7
Unlimited partnership	980	10-50
Production co-operatives	3029	5-20
Collective farms	126	10-20
Limited partnership	4790	10-30
of those with mixed ownership	34	10-30
Closed share companies	619	50-300
of those with mixed ownership	433	50-300
Public share companies	48	100-700
of those with mixed ownership	33	100-700
Other forms of private ownership	1040	5-10
Entrepreneurs	13364	1-5

State owned entities	841	100-3000
Mixed ownership	500	-----
Foreign enterprises	282	10-50

Entities in agricultural sector	1862	50-200
Entities in manufacturing sector	5538	50-500
Entities in services and trade sector	12300	10-100

AFSME clients

Company name	Areas of production/services	Address/Tel., Contact Person
"Argishty"	Milling machines production	Yerevan, 40 Davitashen, I Dr, Apt. 48, Tel: 560638 Rafael Danielian
"Karin"	Men and children socks production	Abovian, 2 Hatisi St., Apt. 43 Tel: (261) 20787 Jurik Mnazakanian
"Nik"	Small size washing machines production	Yerevan, 43 Aigedzor, Apt. 4 Tel: 278827 Ervand Atkanian
"Gloria"	Distributor of Schwab VERSAND Company, owner of a shop	Yerevan, 31 Tumanian St., Tel: 535841, 535871 Grigorij Gukasian
"Linza"	Optical and sun glasses production	Yerevan, 58 Abovian St., Tel: 525614 Samvel Petrosian
"Haik-95"	Chicken farm, eggs and poultry production	Armenia Vanadzor 10, Erkatugainnery St. Tel: 22693, 29358 Gevorg Bakhdasarian
"Mogas"	Distributor of juice from Chily and production of chandeliers, wall lamps and mirrors, design, repairment and construction of the buildings	Yerevan, 51 Barbuse St., Tel: 585119, 278625 Souren Mosikian
"Arevik"	Pig farm	Armenia, Zovk Village Tel: 235866 Norair Gevorkian
"Confectionery Plant"	Production of macaroni and confectionery products such as candy, biscuits, wafers, chocolate bars, caramel	Yerevan, 31 Masisy St., Tel: 556373, 523540 Susanna Minasian
"Remdisel"	Repairing of diesel engines and production of pipes for irrigation and water supply	Armenia, Kotaik Region, Vil. Balahovit Tel: (261) 24529 Hrant Kamalian
"Tashir"	Specialization is the construction of hydrotechnical projects.	Armenia, Tashir Region, Stepanafan Tel: 561079 Levon Hovhasapian
"ArmlnterCom"	Distributor of Heineken beer, bars	Yerevan, 7 Saiat Nova St., Tel: 562615, 521710 Armen Gevorkian
"Armenian Kitchen"	Restaurant	Yerevan, 3 Sverdlov St., Tel: 527382

Compressor Plant	Compressor production	Yerevan, 57 Arshakuniants Tel: 441380, 441682 Vilen Stepanian
"Wine factory"	Wine production	Armenia, Artashat Tel: (245) 26942, 26242 Henrik Papikian

FIRST DRAFT PROJECT PROPOSAL**BITS: BUSINESS INFORMATION AND TECHNOLOGY SERVICES PROJECT****Aims**

- 1** To provide SMEs with access to, and guidance on, business information sources available on the Internet and in other electronic forms.
- 2** To assist SMEs to overcome their business information and communications problems using computers and telematics.

A Objectives**Information services**

- 1** To set up a Centre with computer facilities to enable SMEs to search and download/print out business information from sources on the Internet and from local and CD-ROM databases held at the centre, to suit their specific needs.
- 2** To provide a business information and enquiry service from the Centre, using business information sources on the Internet as well as local and international business databases available on CD-ROM and diskette, responding to enquiries for information from visitors to the centre, in writing or by telephone.
- 3** In cooperation with the other agencies in Yerevan offering services to SMEs, to undertake needs assessment surveys and research among existing SMEs to identify more closely the following:
 - 3.1** trends in SME development and growth; nature and size of businesses, development of export potential, current and future access to information technology, etc.;
 - 3.2** current and likely future requirements for business information.
- 4** Based on the needs assessment results, to develop and produce a range of business information publications in electronic form (eg. electronic bulletins, information databases, market profiles) to suit the requirements of SMEs in Armenia; taking information from international Internet and other sources to produce publications and services directly relevant to local needs.

- 5** To act, in cooperation with other local agencies, as a referral point for SMEs seeking other kinds of assistance in business development (eg. management and business consultancy, financial assistance and training), to ensure that SMEs take full advantage of the assistance available to them in Armenia through government services, private sector, NGO and foreign agencies.

Training services

- 6** To set up a fully equipped IT training facility at the Centre to provide the following services to SMEs:
- 6.1** training in using information technology (PCs, CD-ROMs etc) and operating basic software (eg. MS-DOS, Windows);
 - 6.2** training in accessing and searching business information sources on the Internet;
 - 6.3** training in using business and office software applications, such as word processors, spreadsheets and accounts packages;
 - 6.4** training in using modems, communications software and e-mail facilities.
- 7** To offer at the Centre intensive Business English language training to SMEs, designed to provide language skills in the following areas:
- 7.1** using basic computer software applications, such as Windows and communications software (eg. Mosaic, Netscape, I-COMM);
 - 7.2** searching for business information on the Internet and on international databases; reading, understanding and searching WWW pages and business information sources (eg. Europages, Asia Business Directory, Investor in touch).

Resources of the Centre

The Centre will be located in central Yerevan, in premises on the campus of one of the leading Universities and will be a cooperative venture between Arminco and the University, in which premises, electricity and other basic facilities are provided free by the University in return for the provision of Internet connectivity for their own campus LAN and the opportunity to take advantage of the expertise and services of Arminco's trainers and information specialists. The postgraduate business and management students of the University will also be part of the Centre's target group.

The Centre will be equipped with hardware and software sufficient to train 15 individuals in IT use and Internet access simultaneously. The hardware will be used to provide hands-on access to SMEs to conduct their own information searches.

Staff will be provided by Arminco. The proposed staffing of the Centre is 5 staff:

Director (part-time)
 Training Manager (full-time)
 Information Manager (full-time)
 Technical Assistant (part-time)
 Publications/Marketing Assistant (part-time)

Coordination and cooperation with other Agencies

There are several other agencies - government, private sector and foreign aid-funded - working to assist the development of and provide services to SMEs. Preliminary discussions have taken place with several of these; most notably

- * Armenian Foundation for Small and Medium Enterprises (AFSME/SMEDA)
- * Business Communication Centre (BCC)
- * Trade Point Armenia
- * Chamber of Commerce

Coordination with their work and, in some cases, active cooperation in service provision, are intended as part of this Project. Coordination with related activities and projects funded by the Armenian Government and international donor agencies, such as the World Bank Enterprise Development Programme and the Armenian Social Investment Fund, has also been discussed with the Ministry of Economy, Foreign Aid Coordination Centre.

Information access and services

Clients of the Centre in SMEs will be able to gain access to the international business information sources on the Internet, on CD-ROM or in local sources of business information available in electronic form (eg. databases of Armenian organizations) in any of the following ways:

- * self-access searching on PCs in the Centre;
- * self-access searching on their own PC linked by modem to the Centre;
- * using the Centre's Information Service specialists as an intermediary to undertake searches on the client's behalf.

As information needs of SMEs are identified through the needs assessment research under the Project, and demand in certain areas increases, the Centre will develop its own information products and services, such as electronic and printed bulletins, extracting information of relevance to local SMEs from sources and data now available on the Internet and in other electronic forms.

Sustainability

The Project expects to set nominal charges for its training and information services from the start. At first these charges will be low and subsidized by the Project funding. As demand and volume of work increases, and as the quality and range of the Centre's outputs develops, these charges can be set more realistically. The aim will be to enable the Centre to sustain its services to SMEs on a cost-recovery basis at the end of Project financing.

Project Timescale and Phases

The Project will last for three years and will have three phases:

- Stage 1: Set-up and establishment of the Centre
- Stage 2: Implementation of IT training, basic information services and needs assessment
- Stage 3: Implementation of language training, expansion of information services.

Project funding

Funding from a foreign/international agency will be required and requested to cover the following costs over three years:

- * telecommunications equipment and installation
- * computer hardware and software
- * furniture and other office equipment
- * staff training on short course/working attachments abroad
- * technical assistance from foreign experts in needs assessment research and specialist English language training course design
- * marketing and promotion activities
- * CD-ROM subscriptions and minimal online database access fees
- * telecommunications channel rental charges

Total estimated project cost

The project costs are estimated at US\$500,000.

Project evaluation and review

A programme of review and evaluation of project outcomes and deliverables will be built into the project implementation.

FINAL DRAFT PROJECT PROPOSAL

Project title: Business Information and Technology Services for Small and Medium-sized Enterprises (SMEs) in Armenia

Brief description

After several generations of virtual isolation, the integration of Armenia into the global business community is fundamental to the country's progress in developing strong enterprises. Appropriate information and communications infrastructures are the key to this process, especially considering the physical constraints on travel and cross-border trade imposed by regional conflict. Improvement in these infrastructures is impeded by an inadequate technological base and will not occur without external assistance. This project will directly strengthen the telematics infrastructures in Armenia to enable SMEs, government agencies, business training institutes and other agencies supporting enterprise development in Armenia to access external information via the Internet, X25 databases and other electronic sources, to make use of e-mail networks for business communications and contacts. It will provide telematics facilities to enable SMEs to access electronic business information sources; guidance for SMEs in searching business information sources on the Internet; the services of expert information intermediaries, capable of responding to requests for business and market-related information and of providing business information services specifically tailored to the needs of Armenian SMEs; training and skills development opportunities for SMEs in using telematics applications, using basic software applications in support of business and enterprise development; training and skills development for SMEs in Business English and English language related to telematics applications.

A. Context

Armenia is a landlocked, mountainous country in the southern part of the Caucasus region. The smallest republic of the former USSR, Armenia covers an area of 29,800 sq. km and has a population of 3.7 million, over 96% of which is ethnic Armenian. Armenia shares a border with Turkey to the west, Georgia to the north, Azerbaijan to the east and south-east, and Iran to the south.

Since 1991 Armenia has been in transition towards a free market economy, has privatized land and almost finished the privatization of real estate. The country has incorporated all fundamental human rights and freedoms in its national policy. It is a signatory to numerous international conventions and treaties and is gradually integrating itself into the world community.

The transition process has been hindered by political and military conflicts in the region, the blockade imposed by neighbouring Azerbaijan and Turkey, the devastating earthquake of 1988, and civil and political strife over Nagorno Karabagh, an Armenian enclave annexed to Azerbaijan 72 years ago. In spite of these problems Armenia stands out in the region for its political and social stability.

Armenia, as a landlocked country, is largely dependent on railways and gas pipelines which pass through the territories of neighbouring countries. The blockade resulting from the Karabagh conflict, and the unstable political situation in Georgia have severely interrupted communications and the movement of goods and trade in and out of Armenia and contributed to a continuing energy crisis. The current production of electricity is not sufficient to meet the country's needs and rationing of domestic power supplies is in place.

1 Description of subsector

Employment, privatization and SME development

Due to the economic reforms and structural changes in the economy, the number of jobs in Armenia is drastically decreasing. This has created a serious employment problem. An important means for the government to increase the employment level is to assist in the development of small businesses. These are most well-developed in the trade sector where they account for 70% of commodity circulation. Small business employ 42% of the total labour force.

Accurate statistical data about functioning SMEs, their areas of production or trade, their size, profitability and markets, are not available in Armenia. The State Register, however, lists 1862 business enterprises in the agricultural sector with between 50-200 employees, 5538 business enterprises in the manufacturing sector with between 50-500 employees, and 12300 business enterprises in the services and trade sectors with between 10-100 employees. The majority of privately owned enterprises have under 100 employees.

It is estimated ¹ that 15% of all private enterprises are in the production sector,

¹ from notes provided by Armenian Foundation for Small and Medium-sized Enterprises (AFSME) based on AFSME experience and statistics provided by the privatization committee.

20% in the agricultural sector and 65% are service and training enterprises.

According to the Business Communication Centre (BCC)², Armenian enterprises have competitive advantages in export markets in electrical components, computer software, medical devices and appliances, chemical products, machine and machine-tool manufacture, textiles and certain consumer products. The pre-1991 markets for these goods were mainly the Soviet Union and other Communist-bloc countries. The markets in Russia and the CIS remain important but Armenian entrepreneurs are seeking other export markets in the West, in the central Asian region and the Middle East.

Telecommunications, information technology and information provision

The current telecommunications links between Armenia and the outside world are as follows:

- * through Russia, with a 1,000 channel terrestrial cable passing through Georgia and the Ukraine;
- * through a satellite communications link (AT&T) with 150-200 channels with the USA and Western Europe;
- * in addition, a terrestrial link of approximately 30-40 channels to the Islamic Republic of Iran has been established and is operational.

There are also independent or private satellite links (eg. the Yerevan Physics Institute, several foreign embassies and companies) which cannot be used for commercial purposes.

The main information resources in Armenia are centralized - in the Institute of Informatics which houses the Patent Library and the Scientific and Technical Library of the Republic. The Institute is developing several national information databases (eg Armenian scientific organizations) and works with the Department of Standardization to develop a standard for information exchange (currently 3 or 4 standards are in use nationally). The Institute suffers from a chronic shortage of funds for information resource development.

There are several official and commercial national news and information agencies compiling and distributing information about Armenia through available electronic networks and by telex. Communications infrastructures allow any user in Armenia to work with any open information sources anywhere in the world: information transmission may reach up to 100 kbps.

The main constraint on telematics and information resource development is the high cost of communication services and limited access to functioning telecommunication facilities. Commercial, scientific, technical and government institutions are gradually acquiring the computer hardware to enable access to electronic information sources; but there is a severe lack of appropriately trained systems administrators and few training opportunities for potential users of information networks.

² of the Chamber of Commerce and Industry, supported by European Union TACIS funding.

2 Host country strategy

Enterprise development

The government is encouraging the development of entrepreneurship and is reforming the structure of production and professional skill development. Current plans are to privatise 52% of trade enterprises, 62.7% of food producing enterprises and 60% of service enterprises. According to existing programmes, by 1996, the private sector share in the economy will be at least 42%.

Among the measures recommended in the Human Development Report 1995³ for adoption in the government employment policy is to

- * improve the legal, economic, moral and psychological environment for entrepreneurship, small business and self-employment.

Among measures recommended specifically to assist SMEs are:

- * support the establishment of small businesses and leasing companies;
- * set up a complete legal and economic infrastructure to stimulate development of entrepreneurship;
- * implement business education courses.....through long-term as well as short-term training courses;
- * involve small businesses in credit and technical assistance programmes, commercial and economic relations.

Telematics and information resources

State policy on telematics and information provision has not yet been defined: the Ministry of Information was created in September 1995 and appears to be principally concerned with the press and other media. The Armenian Patents Department was created in 1994. Problems related to copyright and intellectual property rights are in the discussion stage.

The Ministry of Communications issues and renews licences for setting up and operating data transmission networks and preserves to itself the monopoly for commercial data transmission using X25 protocol (INFOCOM) and to the Armenia-USA joint venture ARMENTEL for telephone communications development.

3 Prior or ongoing assistance

In 1995 international organizations have provided a US\$18.5 million investment for entrepreneurship development, the reconstruction of social substructures and the construction of small hydroelectric power stations.

³ 1995 Human Development Report for Armenia, Yerevan, 1995; produced by Armenian experts with sponsorship and support from UNDP and the Government of Japan.

Within the overall technical assistance to be provided to Armenia, US\$10 million are to be allocated for the training or retraining of specialists necessary for the transition to a market economy in the areas of entrepreneurship, management, marketing, finances and investment. US\$5.8 million have also been provided by international financial organizations for credit and technical assistance programmes specifically for SMEs, to serve as a stimulus for small business development.

Funding provided by the European Union (TACIS) for the Armenian Foundation for SME (AFSME/SMEDA) and BCC is likely to continue until 1996/97; AFSME supports the development of SMEs by providing business consultancy, assistance in planning and financial management, market analysis and legal advice; BCC supports and initiates long-term business contacts between Armenian companies and foreign contacts through the preparation and channelling of export offers, import promotion services, assistance with communications and marketing outside Armenia. The two organizations are scheduled to merge and between them have some 200 SME clients to date.

The Ministry of Economy initiated and currently hosts the Trade Point Armenia, part of the UN Conference on Trade and Development (UNCTAD) Global Trade Point Network. Trade Point has 6 founders in Armenia including the Ministry of Economy, the Customs and Excise and two banks. It is targeted at private sector enterprises, providing access to the UNCTAD global databases of business opportunities, trade, tax and export information contributed to the database by some 700 national trade organizations around the world. It intends to contribute foreign investment in Armenia opportunities to the database and assist businesses in overcoming tax, export and other problems in exporting their goods. It is a non-profit organization which charges direct costs.

4 Institutional framework for subsector

In addition to the organizations noted above, investment in SMEs is channelled through a variety of foreign and Armenian non-governmental organizations (NGO), operating in agriculture, food production, humanitarian aid, social and infrastructural development. Bilateral and multilateral foreign aid projects and programmes are coordinated by the Foreign Aid Coordination Centre in the Ministry of Economy.

B. Project justification

B1 Problems to be addressed; the present situation

After several generations of virtual isolation, the integration of Armenia into the global business community is fundamental to the country's progress in developing strong enterprises.

Appropriate information and communications infrastructures are the key to this process, especially considering the physical constraints on travel and cross-border trade imposed by regional conflict. Improvement in these infrastructures is impeded by an inadequate technological base and will not occur without external assistance.

This project will directly strengthen the telematics infrastructures in Armenia to enable SMEs, government agencies, business training institutes and other agencies supporting enterprise development in Armenia to access external information via the Internet, X25 databases (via INFOCOM) and other electronic

sources, to make use of e-mail networks for business communications and contacts, and to acquire the skills required to make full use of telematics applications in business and enterprise development.

SMEs: communications, information and development

Good communications are essential to commercial and enterprise development, especially in the production and service sectors. If SMEs are to exploit business opportunities in local, regional and global markets they are severely constrained by:

- high costs in telecommunications
- poor and inadequate telephone links
- access to e-mail, data transmission facilities and Internet sources inhibited by high costs and lack of capacity
- lack of skills in and understanding of the potential of telematics in business development.

The availability of business information is severely limited in Armenia:

- there are no up-to-date and effective library and information services operating in the field of commercial and business information;
- there are no commercial information brokers or market research services operating in this field;
- the AFSME and BCC services, funded by the European Union TACIS, provide limited information seeking and gathering facilities only as part of a wider package;
- only Trade Point Armenia currently offers access to one of the many international databases of technical and business opportunity information produced and maintained by the international organizations (eg. UNIDO's INTIB, the European Union ECHO and CORDIS databases).

Current constraints on data access and transmission

Three organizations in Armenia currently deal with data transmission using the existing telecommunications infrastructure:

- The Armenian Internet Company (ARMINCO) is a commercial provider of access to the Internet and e-mail facilities: it leases a satellite communication channel from Sovam-Teleport (a Russian-USA joint venture);
- INFOCOM (Ministry of Communications) services a commercial data transmission network using the X25 protocol and leasing a satellite communications link with the SPRINT network. Its main users are banks.
- Yerevan Institute of Physics leases a communication line in the Raduga satellite of the Russian Defence Ministry; it is connected with the computing centre of DESI in Germany and provides services to scientific institutions only.

Given the inadequacy and poor state of the local and international terrestrial telecommunications infrastructure - landlines within Yerevan and throughout the rest of Armenia are in a bad state of repair - the demand for e-mail facilities and access to the Internet is rising, despite the costs, particularly among government agencies, NGOs and foreign organizations in Armenia. The main constraints on

wider and more affordable provision are:

- * insufficient capacity in the existing satellite links to accommodate significant increases in users and volume of data transmission, and the lack of back-up links;
- * dependence on telecommunications links through Russia and regional conflict zones;
- * dependence on the use of Russian military satellite channels which may be periodically taken over for military use;
- * e-mail facilities provide a more efficient means than the telephone of communicating within Armenia as well as with the outside world; however, the domain and name server for Armenian e-mail is currently located in Moscow; messages across Yerevan are therefore routed via Moscow, increasing costs and clogging up existing data transmission channels.

Business information: the Internet and other electronic sources

The best and most up-to-date sources of international financial, commodity and company information are to be found in international commercial databases on hosts such as Data-Star and Dialog (available in Armenia through X25 network); however, the cost of accessing information on these databases is prohibitive for Armenian organizations, and particularly SMEs. Some of these databases are available in CD-ROM format, updated regularly, but for relatively high subscription costs.

There are many sites on the Internet which contain or offer business and market-related information at no cost or very low cost. Information providers increasingly making statistical, financial and company databases and information resources available via WWW and Gopher sites include

- * national government organizations such as the US Statistical Service, many national stock exchanges, and national trade and industry development agencies such as Chambers of Commerce;
- * Commercial organizations, such as stock brokers, market information and market research companies, company database providers.

Much of the information to be found is of varying quality and currency: typically company information maybe 6 months out of date, while the most current information is only available through X25 protocol networks. The information available is dominated by US information providers, though this is changing fast. Many WWW sites provide only outline information, requiring immediate payment or registration for access to the detailed and quality information. Nonetheless, there is a very wide and increasing range of business and market information available on the Internet now, much of which would be of great value to existing and emerging SMEs in Armenia. There are three major problems, however:

- * opportunities for access to these sources by SMEs is currently very limited (see above) by telecommunications inadequacies and availability of hardware;
- * the bewildering range and relative complexity of sources requires a certain level of expertise and understanding to search, select and interpret effectively, and considerable time in which to do this;

- English language skills - particularly in specialist business English and the terminology of telematics and the Internet - are essential if SMEs are to make effective use of international business information sources.

Identified requirements

The following requirements have been identified:

- expanded telecommunications and network capacity in Armenia to provide reliable and affordable access to the Internet, the government's X25 network and other electronic information sources (eg. INTIB), and e-mail facilities in support of business and enterprise development;
- availability of appropriate computer and telematics hardware and software facilities to enable existing and emerging SMEs to access and search electronic business information sources;
- guidance for SMEs in accessing and searching business information sources on the Internet and other electronic sources;
- the services of expert information intermediaries, capable of responding to requests for business and market-related information, of searching and selecting from available Internet and other electronic information sources, and of providing business information services specifically tailored to the needs of Armenian SMEs;
- training and skills development opportunities for SMEs in using telematics applications, in searching for business information on the Internet and other electronic sources, and in using basic software applications in support of business and enterprise development;
- training and skills development for SMEs in Business English and English language and terminology related to telematics applications.

B2 Expected end of project situation

- 2.1 A fully-operational telecommunications and telematics network facility, which expands existing provision of access to the Internet and e-mail facilities to organizations in Armenia and incorporates the Armenian name server (domain). Managed on a commercial basis by ARMINCO.
- 2.2 A fully-operational telematics, Internet and business information training centre, offering training and skills development in support of business and enterprise development on a cost-recovery basis, with an expanding range and number of clients among SMEs, government, NGO and training agencies. Managed by ARMINCO in a cooperative venture with the State Engineering University.
- 2.3 A comprehensive and affordable business information service based on Internet and other electronic sources, offering enquiry services, self-access search facilities and information products tailored specifically to Armenian SME requirements, operating on a cost-recovery basis and managed by ARMINCO.

B3 Target beneficiaries

The target beneficiaries of this project will be (in order of priority):

- * all existing and emerging SMEs in Armenia;
- * government, NGO, non-profit making and foreign organizations working to support business and enterprise development in Armenia;
- * staff and students in business and management training institutions or university departments;
- * organizations outside Armenia seeking information on and business contacts with Armenian enterprises and business support programmes.

B4 Project strategy and implementation arrangements

Methodology

This project builds on existing capabilities and technological achievements. ARMINCO is already the major commercial provider of Internet access and e-mail services in Armenia, with important clients among government, foreign and international organizations and from the private sector. There is an active Armenian Internet Users Group, which negotiates on international and domain issues with the Internet Society in the USA.

Telecommunications and network resources

It will be necessary to install the following telecommunications and computer facilities to serve as a communications point in Yerevan:

- * Computers: 2 x Sun Spark servers operating as database server and name server, utilizing TCP/IP
- * data backup devices (eg. RAID)
- * routing equipment
- * a VSAT satellite dish
- * 3 k UPS (uninterruptable power supply) for the whole system

The communications point will also be equipped with

- * 6 high-speed radio modems, to enable network service provision to scientific and technical institutions, government and foreign organizations and connection to the Armenian X25 protocol network;
- * 10 dial-up modems, to enable SMEs to connect to the network for remote access to information services and the Internet.

Software requirements will include one UNIX-based machine with database management software (eg. ORACLE, INTEGRIX).

Location and premises

The Project communications centre will be based in ARMINCO premises in the State Long-Distance Telephone Company building in central Yerevan. The Business Information and Technology Services (BITS) Centre will be located in central Yerevan, in premises on the campus of the State Engineering University.

The BITS Centre will be a cooperative venture between ARMINCO and the University, in which premises, electricity and other basic facilities are provided free by the University in return for the provision of Internet connectivity for their own campus LAN and the opportunity to take advantage of the expertise and services of

the BITS Centre's trainers and information specialists. The postgraduate business and management students of the University will also be part of the Centre's target group.

The premises will consist of one large training and information technology (IT) room equipped with 15 PCs and several printers connected to the Centre local area network (LAN); and one office large enough to accommodate working space for the Information Service Manager, Training Manager and technical support, as well as PCs, CD-ROM equipment, telephone and fax, photocopier, information materials in print and other media.

Human resource requirements and development

The project will require the following staff in Armenia:

- BITS Director
- in the ARMINCO communications centre: 1 Network Manager (Systems Administrator) and 3 Technical support staff
- in the BITS Centre: 1 Training Manager, 1 Information Manager, 1 Technical Support Assistant and 1 Publications/Marketing/Clerical Assistant.

Short-course and working attachment training in USA and Western Europe will be required for the Network Manager (Systems Administrator), the Training Manager and the Information Manager. Some technical training, available locally or in Moscow, will be required for the Technical Support staff. Technical assistance from foreign specialists will be required in

- the design and implementation of needs assessment research
- the design and delivery of specialist Business English training

BITS Centre training courses

Training in IT access and use, and in the use of specific applications and services, will be delivered in the BITS Centre to match the requirements of SMEs and other in the target groups by specialists from ARMINCO. Such training may take the form of set and regular courses, one-to-one or small group training, hands-on practice sessions for business persons.

The training will be designed with the following factors in mind:

- existing skills of the target groups
- numbers and size of groups requiring training
- timing and duration of training sessions to match the needs of SMEs and availability of trainers
- maximum cost-effectiveness in training delivery
- relevant technical considerations

Specialist English language training will be provided to the BITS Centre, to meet

identified requirements, by the University Project partner; clients of the Centre will be able, through its location, to take advantage of the language training expertise and facilities available in the University.

It is envisaged that a tailor-made programme of language training inputs will be designed and delivered on a cost recovery basis. Technical assistance inputs will be required from a foreign English language teaching expert in the initial design of these training inputs.

BITS Centre information access and services

Clients of the BITS Centre in SMEs will be able to gain access to the international business information sources on the Internet, on CD-ROM or in local sources of business information available in electronic form (eg. databases of Armenian organizations) in any of the following ways:

- * self-access searching on PCs in the Centre;
- * self-access searching on their own PC linked by modem to the Centre;
- * using the Centre's Information Service specialists as an intermediary to undertake searches on the client's behalf.

It is anticipated that, as SMEs in Armenia develop export potential and interest in external markets, the demand for accurate and up-to-date information will increase. The following kinds of business information are likely to be sought:

- * suppliers/sourcing
- * marketing information and market research
- * finance assistance availability
- * other financial information, such as international commodity prices
- * competitors
- * standards
- * environmental legislation
- * export information
- * technical developments
- * innovations
- * business start-up information
- * local economy and local business information.

Through access to a wide range of international information sources, publications and contacts, and through close cooperation with other local agencies offering support and services to SMEs, the Centre would provide comprehensive coverage of these requirements.

As information needs of SMEs are more closely identified through the planned needs assessment research under the Project, and as demand in certain areas increases, the Centre will develop its own "spin-off" information products and services, such as regular electronic and printed bulletins, extracting information of direct relevance to local SMEs from the vast mass of sources and data now available on the Internet, in X25 network commercial and non-commercial databases (eg. DATASTAR/DIALOG) and in other electronic forms.

Sustainability

The sustainability of the BITS Centre and the business information network services developed there is viewed as a critical measure of the Project's success. The Centre will set nominal charges for all its services from the start. At first these charges will be low, subsidized by the Project funding. As demand and volume of work increases, and as the quality and range of the Centre's outputs develops, these charges can be set more realistically.

The aim will be to enable the Centre to sustain its services to SMEs on a self-financing basis at the end of Project financing. This will in part depend upon the success of the promotional activities of the Centre, of the accuracy and relevance of the data gathered in the planned information and training needs assessment research, the quality of the BITS Centre outputs in training and information services, and the reliability of the telecommunications network and connectivity established under the Project.

Project Timescale and Phases

The Project will last for three years. (see Annex I: Outline Work Plan).

B5 Reasons for assistance from UNDP/UNIDO

UNDP has established telematics and SMEs as two priority development areas for support in the CIS region. They have extensive local knowledge of the problems associated with business development in Armenia, through the Yerevan office, and of Armenian government policy relating to enterprise development, employment creation and human resource development generally.

UNIDO expertise and methodologies in preparing and managing projects in support of business, technological and industrial development is very valuable in this project context. UNIDO's involvement and interventions in development projects in the CIS region provide established contacts and experience.

Among UNIDO's stated priorities, as part of its increased emphasis on technical cooperation with the governments of economies in transition, is to exploit new methods of data dissemination for government and private sector, using national and international information networks (including the Internet).

UN databases, in particular those of UNIDO, are of great importance in enterprise and technological development. UNIDO has already designated ARMINCO as the Armenian National Focal Point for its INTIB database.

B6 Special considerations

- 6.1 This project relates directly to the development goal of empowering the private sector in the creation of employment and successful enterprise and in the transition to a free market economy, shared by the Government of Armenia, UNDP and UNIDO.
- 6.2 The project will be implemented in close collaboration with, and in support of, other foreign aid-funded projects operating in support of SME development.

- 6.3 The project has a CIS regional dimension in its potential as a model for other business information provision projects in CIS countries.

B7 Co-ordination arrangements

ARMINCO, which is a private company, will be the principal national counterpart and implementator, organization. It will work closely with the State Engineering University in the design and development of language training services at the BITS Centre, and with the local UNDP office in the installation of telecommunications equipment and links.

There are several other agencies - government, private sector and foreign aid-funded - working to assist the development of and provide services to SMEs. Coordination with their work and, in some cases, active cooperation in service provision, are intended as part of this Project.

Coordination with related activities and projects funded by the Armenian Government and international donor agencies, such as the World Bank Enterprise Development Programme and the Armenian Social Investment Fund, will also be a factor in implementation strategies.

A Coordinating Committee will be established to oversee the Project activities, provide coordination information, policy guidance, and monitor progress, etc. It should consist of selected private and public sector officials, with representatives drawn from such organizations as

- * Ministry of Communications
- * AFSME/BCC
- * other projects and programmes supporting SME development
- * Armenian Internet Users Group.

B8 Counterpart support capacity

ARMINCO was founded in 1992. It is a private company managing 2 Internet domains and providing 3 major services: a menu-oriented online information service with global e-mail, Usenet Newsgroups, Internet resources such as Telnet, WWW and Gopher; an offline e-mail service using UUCP; access to the full range of Internet facilities by providing an IP connection to separate hosts or networks. ARMINCO has more than 300 users of its services, including international organizations, government organizations, foreign embassies and private sector companies.

It is the National Focal Point (NFP) of the RINSE UNESCO network; the designated NFP for UNIDO's INTIB database, and has been nominated by UNESCO as the national telematics applications information service in a 3 year project proposal to for funding from the European Union Telematics Applications Research and Development Programme: the project will be called STACCIS - Support for Telematics Applications Cooperation with the CIS.

ARMINCO has the proven capacity and capabilities to provide the technical and managerial expertise required by this Project. It also has a wide range of important

and influential contacts among private and public sector organizations in Armenia.

C. Development objective

To expand and strengthen existing telecommunications and network infrastructures which provide access in Armenia to the Internet and e-mail services, in order to provide SMEs with access to, and guidance on, business information sources available on the Internet and in other electronic forms; and to assist SMEs to overcome their business information and communications problems through the use of telematics applications.

D. Immediate objective(s), outputs and activities

D1 To procure and install appropriate telecommunications and telematics hardware and software in the Business Information and Technology Services (BITS) Centre and elsewhere in Yerevan.

1.1 Output 1

Fully-functioning access to Internet and other electronic information and communications resources from a technically operational Centre.

Activities

- 1.1.1 Specification of hardware and software requirements and costs.
- 1.1.2 Procurement of hardware and software and effective delivery to Yerevan.
- 1.1.3 Installation and testing of telecommunications hardware and connectivity.
- 1.1.4 Installation and testing of network hardware and software.

1.2 Output 2

ARMINCO technical staff and systems administrators provided with appropriate training to ensure effective installation and operation of the telematics systems and network.

Activities

- 1.2.1 Network Manager (Systems Administrator) attends training course at NASA in USA.
- 1.2.2 Technical training in network management and Internet access provided to two members of ARMINCO in Russia or Western Europe as appropriate.

D2 To set up the BITS Centre with computer facilities to enable SMEs to search and download/print out business information from sources on the Internet and from local and CD-ROM databases held at the centre, to suit their specific needs.

2.1 Output 1

Fully operational Centre, furnished and equipped with PCs and printers, and a multiple CD-ROM drive, connected to the network and capable of providing Internet and other electronic source access, on site or remotely.

Activities

- 2.1.1 Specification of hardware/software requirements and costs.
- 2.1.2 Procurement and delivery in Yerevan of computer hardware and software.
- 2.1.3 Specification and procurement locally of office and training room furniture, office equipment, etc.
- 2.1.4 Installation and testing of all IT facilities.

2.2 Output 2

A range of up-to-date non-Internet business information sources, electronic and print, available for access at the Centre, on-site or remotely, including appropriate international and local Armenian directories and CD-ROM databases.

Activities

- 2.2.1 Identification of relevant information materials, international CD-ROM databases, directories etc.
- 2.2.2 Select and order/subscribe to the relevant materials for the BITS Centre.

D3 To implement the following training services for SMEs from the BITS Centre: training in using information technology (PCs, CD-ROMs etc) and operating basic software (eg. MS-DOS, Windows); training in accessing and searching business information sources on the Internet; training in using business and office software applications, such as word processors, spreadsheets and accounts packages; training in using modems, communications software and e-mail facilities.

3.1 Output 1

Assessment report on training priorities, feasibility and methodology of training, potential markets etc.; presented to Coordinating Committee and Executing Agency for consideration.

Activities

- 3.1.1 Training Manager undertakes training in design and delivery of training inputs.
- 3.1.2 Training Manager researches training requirements and market for training services and produces assessment report.
- 3.1.3 Consideration of report
- 3.1.4 Priorities for training service programme established and

agreed.

3.2 Output 2

Detailed training programme, strategy and training course modules and evaluation methods designed for BITS Centre.

Activities

- 3.2.1 Training Manager designs training programme to meet SME client requirements.
- 3.2.2 Training Manager designs and finalizes training materials and modules, and evaluation instruments.

3.3 Output 3

First training service implemented and evaluated.

- D4 To undertake a needs assessment survey and information needs research among existing SMEs, in cooperation with the other agencies in Yerevan, to identify more closely trends in SME development and growth, including the nature and size of businesses, the development of export potential, current and future access to information technology, etc.; and current and likely future requirements for business information.**

4.1 Output 1

Research methodology and survey/data gathering programme.

Activities

- 4.1.1 Technical assistance from foreign specialist in design of research methodology, surveys and data analysis.
- 4.1.2 Training in data analysis for ARMINCO staff.
- 4.1.3 Identification of research sample among Armenian SMEs.
- 4.1.4 Set up research data analysis software
- 4.1.5 Design research and needs assessment survey programme

4.2 Output 2

Completed needs assessment survey and other research.

Activities

- 4.2.1 Data gathering.
- 4.2.2 Data analysis.
- 4.2.3 Research and needs assessment report.

- D5 To provide a business information and enquiry service from the BITS Centre, using business information sources on the Internet as well as local and international business databases available on CD-ROM and diskette,**

responding to enquiries for information from visitors to the centre, in writing or by telephone.

5.1 Output 1

SME clients access Internet business information sources.

Activities

- 5.1.1 Information Manager undertakes training in using business information sources and delivering information services.**
- 5.1.2 Information Manager trains other Centre staff in basic business information sources; identification and use.**
- 5.1.3 Identification of Internet resources of potential interest and value to Armenian SMEs.**

5.2 Output 2

Established enquiry service for business information enquiries.

Activities

- 5.2.1 Charges for information services set.**
- 5.2.2 BITS Centre handles enquiries for information and offers guidance to clients using self-access facilities.**
- 5.2.3 Records kept of enquiries: kinds of enquiry, enquirer, source of information used, etc.**
- 5.2.4 Database and mailing list of enquirers and clients compiled.**

D6 To develop and produce a range of business information publications in electronic form (eg. electronic bulletins, information databases, market profiles) to suit the requirements of SMEs in Armenia as identified in the needs assessment research; taking information from international Internet and other sources to produce publications and services directly relevant to local needs.

6.1 Output 1

Information production/electronic publications and services programme.

Activities

- 6.1.1 Identify from needs assessment research the key sectors of activity for SMEs and the relevant information needs.**
- 6.1.2 Plan and design a range of information products specifically targeted to meet those needs.**
- 6.1.3 Plan and design the format, content and currency of the information products and services.**
- 6.1.4 Plan a timetable and schedule of charges for the products and services.**

6.2 Output 2

Information products and services targeted at specific SME needs.

Activities

- 6.2.1 Produce and disseminate the business information products and services.
- 6.2.2 Up-date and review on a regular basis.
- 6.2.3 Evaluate the impact and success of the products and services.

D7 To offer at the BITS Centre intensive Business English language training to SMEs, designed to provide language skills in the following areas: using basic computer software applications, such as Windows and communications software (eg. Mosaic, Netscape, I-COMM); searching for business information on the Internet and on international databases; reading, understanding and searching WWW pages and business information sources (eg. Europages, Asia Business Directory, Investor in touch).

7.1 Output 1

Detailed programme and timetable of specialist Business English language training course and services.

Activities

- 7.1.1 Technical assistance from foreign specialist to assist University trainers in design and delivery of Business English inputs.
- 7.1.2 Develop detailed programme of English language training inputs.
- 7.1.3 Design and produce training materials and modules.

7.2 Output 2

Business English course/training inputs delivered to SME clients in BITS Centre.

Activities

- 7.2.1 University trainers deliver training in a regular programme.
- 7.2.2 Evaluation of training courses.

D8 To act, in cooperation with other local agencies, as a referral point for SMEs seeking other kinds of assistance in business development (eg. management and business consultancy, financial assistance and training), to ensure that SMEs take full advantage of the assistance available to them in Armenia through government services, private sector, NGO and foreign agencies.

8.1 Output 1

Detailed and regularly up-dated information bank on business

development and support activities offered by organizations in Armenia.

Activities

- 8.1.1 Coordination of activities and services between the BITS Centre and other support services to SMEs.
- 8.1.2 Regular up-dating of contacts and other information by BITS Centre staff.

D9 To promote and publicise the BITS Centre services in a continuous programme of publicity to SMEs, dissemination of information about the services through seminars, exhibitions, demonstrations, etc.

9.1 Output 1

Conference/seminar to launch the BITS Centre and services

Activities

- 9.1.1 Organize a one-day conference/seminar for SMEs at to demonstrate and discuss the BITS Centre services.

9.2 Output 2

Publicity brochure outlining BITS Centre services and charges.

Activities

- 9.2.1 Design and produce a publicity brochure outlining the training and information services.
- 9.2.2 Disseminate brochure widely to SMEs and other organizations supporting or active in the sector.
- 9.2.3 Up-date the publicity brochure on a regular basis and maintain a marketing mailing list.

9.3 Output 3

Promotion and publicity activities in other media and events.

E. Inputs

Executing Agency: UNIDO

- 1 Project management and review services
- 2 Equipment procurement services
- 3 Technical assistance by foreign specialists

National Counterpart: ARMINCO

- 1 Communication Centre premises: basic facilities (electricity etc).
- 2 Communications Centre Technical support staff and salaries (3 posts)

- 3 Personnel to fill posts of
 - BITS Project Director,
 - Network Manager,
 - Training Manager,
 - Information Manager,
 - Publications/Marketing/Clerical Assistant
- 4 Installation and testing of all telematics hardware and software
- 5 Network maintenance costs (servicing and spares etc.)
- 6 Local telecommunications costs (telephone and fax)

State Engineering University

- 1 Premises for the BITS Centre: basic facilities (electricity etc.)
- 2 University personnel to run English language training courses in BITS Centre.

UNDP

- 1 VSAT satellite dish and telecommunications channel rental costs

Foreign donor(s)

- 1 Telecommunications & networking equipment and installation costs
- 2 BITS Centre computer and IT hardware/software costs
- 3 BITS Centre furniture and office equipment costs
- 4 Online and CD-ROM database subscriptions
- 5 National Counterpart staff costs (5 full-time posts)
- 6 National Counterpart staff training
- 7 Publicity, promotion and marketing costs

F. Risks

The following risks are anticipated (with an indication of the estimated likelihood of occurrence):

- (a) National Counterpart will encounter difficulties in recruiting and keeping well-trained and qualified staff (medium).
- (b) Slow take-up of BITS Centre services on the part of SMEs due to economic situation and lack of awareness of IT potential (medium).
- (c) Delays due to procurement and delivery of telematics equipment (medium).
- (d) Malfunctioning of the public telephone network (medium).

G. Prior obligations and prerequisites

- (a) Provision of premises for the BITS Centre in the State Engineering University.
- (b) Provision of the VSAT satellite and telecommunications channel.

H. Project review, reporting and evaluation

The National Counterpart ARMINCO will implement a regular programme of evaluation and review of BITS Centre training and information outputs, and will revise and adapt activities and outputs in line with the results of evaluation.

The Project will be subject to two Reviews by an independent consultant appointed by the Executive Agency, reporting to UNIDO and foreign donors: these reviews will be:

- * a mid-term Review, in which recommendations might be made for adjustment and amendment to the original Project plan;
- * a Project completion Review.

I. **Legal context**

J. Budget

The following cost estimates are divided into costs for Years 1 - 3 of the Project. Estimates have been based on 1995 prices and exchange rates and are quoted in US dollars.

	Year One	Year Two	Year Three	Totals
Cost item	Costs	Costs	Costs	Costs
PERSONNEL				
<i>BITS Director salary</i>	5,000	5,000	5,500	15,500
<i>Network Manager salary</i>	2,400	2,400	3,000	7,800
<i>Training Manager salary</i>	2,400	2,400	3,000	7,800
<i>Information Manager salary</i>	2,400	2,400	3,000	7,800
<i>Publications/Marketing/Clerical Assistant</i>	1,200	1,200	1,500	3,900
Sub-total	13,400	13,400	16,000	42,800
TELECOMS & NETWORK SET UP				
<i>PES-8000 Antenna, routers & IP software</i>	56,000			56,000
<i>Radio modems & dial-up modems</i>	70,000			70,000
<i>Sun Spark 20 stations x 2</i>	16,000			16,000
<i>Network equipment, cabling etc</i>	2,000			2,000
<i>Installation, shipping, insurance etc</i>	15,000			15,000
Sub-total	159,000	0	0	159,000
TELECOMMUNICATIONS COSTS				
<i>Satellite 128 kbit channel rental*</i>	120,000	120,000	120,000	360,000
Sub-total	120,000	120,000	120,000	360,000
BITS CENTRE EQUIPMENT				
<i>15 X 486 PCs and software</i>	35,000			35,000
<i>CD-ROM multiple drive ("jukebox")</i>	4,000			4,000
<i>3 laser printers</i>	4,500			4,500
<i>Furniture and office equipment</i>	7,000			7,000
Sub-total	50,500	0	0	50,500
INFORMATION PROVISION COSTS				
<i>CD-ROM subscriptions & database fees</i>	15,000	15,000	15,000	45,000
<i>Marketing & publicity</i>	3,000	1,000	1,000	5,000
<i>Office supplies</i>	1,000	1,000	1,000	3,000
Sub-total	19,000	17,000	17,000	53,000
TECHNICAL ASSISTANCE				
<i>TA for needs assessment research</i>		15,000		15,000
<i>TA for English course design</i>		15,000		15,000
Sub-total	0	30,000	0	30,000
STAFF TRAINING				
<i>Training for Managers in USA/Europe</i>	35,000			35,000
<i>Training for technical staff locally/Russia</i>	10,000			10,000
Sub-total	45,000	0	0	45,000
OTHER COSTS				
<i>Project management and review</i>	3,000	13,000	13,000	29,000
<i>Local travel</i>	1,000	2,000	1,000	4,000
Sub-total	4,000	15,000	14,000	33,000
TOTALS	410,900	195,000	117,000	722,900

*discount possible on 3 year project

RECOMMENDED JOB DESCRIPTIONS FOR BITS MANAGERS**BITS Centre Training Manager**

The post will have the following responsibilities:

- 1 To plan, design and deliver a programme of training courses and activities in:
 - * using information technology (PCs, CD-ROMs etc) and operating basic software (eg. MS-DOS, Windows);
 - * accessing and searching business information sources on the Internet;
 - * using business and office software applications, such as word processors, spreadsheets and accounts packages;
 - * using modems, communications software and e-mail facilities.
- 2 To manage the technical support staff of the BITS Centre and coordinate their inputs to the training programmes.
- 3 To assist the Information Manager in providing business information in response to enquiries, as appropriate.
- 4 To visit SMEs off-site to provide advice, guidance and training (as required) in setting up, using and developing telematics applications in support of business development.
- 5 To liaise with the State Engineering University on the provision of BITS Centre services and facilities to Faculty and post-graduate students.
- 6 To manage, in cooperation with the Technical Assistance expert and State Engineering University staff, the introduction of English language training courses and activities.
- 7 To train all BITS Centre staff in using telematics applications and up-dating them on technological developments.

BITS Centre Information Manager

The post will have the following responsibilities:

- 1 To identify, become familiar with and regularly review all relevant sources of business, economics, market-related information on the Internet, in other electronic and printed sources.
- 2 To advise on and recommend sources of information to clients and enquirers.
- 3 To train and provide guidance to clients and enquirers on searching for business and related information on the Internet and in other electronic and printed sources.
- 4 To manage the planning and implementation of the SME needs assessment research, in cooperation with the Technical Assistance expert.
- 5 To plan and implement a programme of proactive information service products, publications and other outputs, specifically relevant to the needs of Armenian SMEs.
- 6 To manage and direct the publicity and promotional activities and outputs of the BITS Centre.
- 7 To provide training to other BITS staff in information enquiry work and using relevant source on the Internet and elsewhere.
- 8 To manage ongoing information enquiry services, sharing responsibility for staffing the enquiry point with other BITS Centre staff.

RECOMMENDED CD-ROM DATABASES FOR BUSINESS INFORMATION SERVICE

DIALOG OnDisc: Directory of US Importers and Exporters \$3150

DIALOG OnDisc: East European Business Intelligence \$4495 per year

EIU Country Forecasts on disc

Eastern Europe
Middle East/Africa
Western Europe

Predicasts F&S Index plus text \$6000 per year

Perinorm International £1150 per year
(international standards and technical specifications)