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21498

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

STRENGTHENING/ESTABLISHING INDUSTRIAL AND BUSINESS INFORMATION CENTRES FOR SMEs IN RUSSIA AND OTHER SELECTED CIS COUNTRIES

XP/RER/95/038

RUSSIAN FEDERATION

**Technical report: The organization of the industrial information
services for the needs of SMEs in Russia***

Prepared for the Government of Russia
by the United Nations Industrial Development Organization

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ABSTRACT

The technical report was carried out within the framework of the UNIDO project XP/RER/95/038 - "Strengthening/Establishing Industrial and Business Information Centres for SMEs in Russia and other Selected CIS countries."

The duration of the study was four months, from September to December 1995.

Currently, the information infrastructure for serving SMEs in Russia is not fully developed. There exists no all-Russian system for collecting, analysing and disseminating industrial information. This not only hampers the development of SMEs, but also the whole business and enterprise activities in Russia.

The report provides facts and an analysis of the current situation of industrial information support to SMEs in Russia.

The information needs of SMEs, as well as the available information resources and the possible means of distributing information are discussed. Further, the existing telecommunication and information infrastructure in Russia, as the background for developing a future industrial information structure in Russia is discussed.

The structure of information modules, functioning as the administrative and technical centres for the development of industrial information support to SMEs is proposed.

The results of utilizing the information module in the OLVIT, for the information support of SMEs, are also presented.

1. INTRODUCTION

Activities began in September 1995 and were completed in December 1995. The main objectives were to study the current situation in Russia with regard to industrial information support to the Russian SMEs.

The radical market reforms in Russia have initiated a new phenomenon - enterprising. The process of its growth appears to be exclusively complex and inconsistent. The same is true for the growth of information businesses.

It is rather difficult to restore links between enterprises, to find an optimal combination of activities in the information market with expedient conditions necessary for the new business of information services.

In Russia today, one can watch the creation of information and telecommunication businesses, the main idea of which is not to make a profit at any cost, but to develop in a harmonized manner under the conditions of transition prevalent in Russia towards a new stage of economic development. World practice shows that the development of business requires a high-level role to be played by high-quality and reliable information.

The information business in Russia, after a promising start, is now experiencing difficulties. The main reasons for this, besides the objective processes of a recession in the economy, are the following:

1. Russian businessmen are not fully acquainted with using information for their needs. As a result, they cannot always estimate the profit to be obtained from using information for their activities.
2. The information infrastructure in Russia is not well developed. This results in it being hard to find a valid information source.
3. Information resources in Russia, even from government and state sources, are not always reliable.
4. Poor quality of information available in the databases and insufficient upgrading of such data.
5. Access to information from various parts of the country differs greatly due to the non-uniform distribution of information centres and companies. In some regions there is a general lack of Russian information.
6. As a general rule, SMEs are not equipped with modems. There is no reliable data available on the number of SMEs using networking services (at least e-mail), this is estimated to be less than 20 percent.
7. A lack of complete information, particularly in the group "goods for sale ....".
8. Inadequate classification of many information resources and the practical absence of any analytical processing of this information.
9. Narrow themes, and duplication of information in databases from various suppliers.
10. Cost, the services are too expensive for the majority of SMEs.
11. Weak technical development of the potential users of the information available.

There is at present no infrastructure in the country that can provide a basis for legal, financial, supply and sales services required for the efficient operation of SMEs in the

country. This infrastructure would need to be coordinated with changing market conditions. Some actions undertaken by some SMEs are a result of a lack of knowledge of up-to-date laws and regulations. Legal support to SMEs is particularly inadequate in the provinces, due to an insufficient number of legal advice offices and the high cost of legal advice. Information on markets and potential customers for SMEs is lacking. The advertisement of products, together with company profiles and capabilities, is usually carried out locally. Numerous sales mediators inflate prices two- or even threefold, when the products of SMEs are sold outside the major industrial, or administrative centres of the country.

Production co-operation and an exchange of information between various SMEs are inadequate. A centralized co-ordination of their activities is not yet established.

Some changes were experienced due to the expansion of banking services in the country (remote access of accounts by clients, credit cards etc.). Some turn-key, end-user oriented solutions for data processing and storage, access to network resources are offered. Projects would be developed, specialized hard- and software solutions offered, together with user training and sometimes maintenance and repair. At esent database access is minimal on the most commonly used computer networks in the country, the majority of access is generated by e-mail services.

This report aims to show the needs of SMEs in industrial information and the means of organizing information services in Russia, together with telecommunications which could prove to be the most effective method to enable uniform access to information throughout the country. The activities being reported, together with the results, were tested using the Network Information System of JSC "OLVIT".

2. RECOMMENDATIONS

Resulting from the above general observations on the situation of the information market in the country, the success of the activities of SMEs should be focussed on the following:

a) State legislative acts are needed to guarantee real and not formal, enterprises and companies registry; this forms the basis for reliable and up-to-date information.

b) It is necessary to simplify, formalize and centralize registration procedures of enterprises.

c) On the basis of selected regions, using the support of regional administrative and commercial structures, consideration should be given to developing a regional industrial information structure using information and consultancy companies. To start with, the activities of the company should focus on:
- development of an all-Russia business directory;
- legislative consultation;
- taxation consultation;
- Russian companies' profiles;
- foreign companies' profiles;
- marketing research;
- leasing of equipment (computers, photocopiers etc.) and services (faxes, e-mail, international telephone calls etc.)

d) To install business links between libraries and commercial information companies. At first, it would only be viable to use state libraries. The role of the information

companies should be to work as information brokers using the information and analytical potential of the libraries.

e) To design the structure of a Standard Information Module and to start its implementation in regions with a developed telecommunication structure.

f) To establish an association for the information support to SMEs, in Moscow. This association should consist of a number of state and commercial companies.

g) Expansion of the limits for the usual standard structure of an information file is required for the majority of companies.

h) Increased reliability of technology for information and telecommunication services.

i) Establishment of a tariff policy for companies, depending on the situation in the market.

j) Co-operation between state and commercial enterprises on a commercial and organizational basis.

3.   ACTIVITIES AND OUTPUTS

The main activities were as follows:

-   to determine the needs of SMEs with regard to the type of information and information services;
-   to analyze the present situation of information services for SMEs;
-   to make a forecast of the future information needs of SMEs;
-   to catalogue existing on-line databases of business information in the CIS and eastern Europe;
-   to offer recommendations on the ways and means of organizing information services, subcontracting and partnership, and information exchange services.

3.1   Brief Introduction on the Current Information Supply of SMEs in Russia

3.1.1   SMEs in Russia - Major fields of activities

At present there are more than 1 million small- and medium-size enterprises in Russia, approximately 5,000 (or 0.5%) are registered in Moscow. The remaining are widely spread throughout the country. Small- and medium-size enterprises are those enterprises with 25 to 50 employees and production plants with up to 200 employees.

The main specializations of SMEs in commerce and service activities can be defined as follows:

-   trade and marketing activities, sales agency;
-   design, adjustment and repair of equipment, vehicles and domestic machinery;
-   professional and technical training;
-   information services, consulting;
-   publishing, advertising, organization of exhibitions;
-   show business.

The production of SMEs can be defined in the following categories:

-   industrial equipment, tools, spare parts and devices;
-   electrical and electronic products and devices,

- software development and installation;
- contruction materials, raw materials, semi-finished materials, metal goods;
- medical equipment, biological goods, drugs, chemical substances, toiletries and cosmetics;
- environment protection equipment and technology;
- theatrical equipment;
- food;
- furniture, sports goods, clothes, fancy goods (including jewelery, souvenirs), tableware, and paper articles.

3.1.2 Information Services needed to assist SMEs

The following is the result of information resulting from an analysis of information gained through using the JSC OLVIT system during a period of two years.

- General Information. Legislative, reference information, business directories, political and economic news, state and regional tariffs and taxation.

This information can be found through the mass-media, in a printed form and through a number of remote information systems. This is probably the most widely spread information activity in the country and is generally carried out by the SMEs themselves. It is also the most cost-effective information supply available to SMEs. However, the availability of information, and its quality, vary from region to region.

- Requests for Information Service. Company profiles, market research, competitor analysis, analytical information, subcontracting and partnership information.

This type of information is generally provided by special companies who are engaged in a value-added information service. These companies work as informat on brokers and analytical centres, using general information from specific sources. This is a cost-effective method only in the main industrial and economic cities in the country, primarily in Moscow and St. Petersburg. Outside these centres, the costs rise dramatically leading to the result that it is not so widely used as mass-media.

- Business Adviser - Company oriented information service.

Due to the high costs involved in this type of service, it is not generally used by SMEs. This type of information service, however, could be extremely important for SMEs, in particular for newly established ones.

3.1.3. An analysis of needs of SMEs in industrial information and other services

An analysis was carried out through questionnaires and personal interviews with more than 200 small- and medium-size enterprises in various regions of the country. The information available on the Olvit Network Information System was used as the starting point to gather information on requirements, sources, and ways of accessing information. The results can be briefly described as follows:

Type of Information	Of Interest (in %)	Of No Interest (in %)
Partner/customer	34	66
Sources/conditions of credit, banking information	24	76
Suppliers of goods and production	36	64
Legislative	48	52
Labour market/expertise	20	80
Reference/business directory	18	82
Conditions of security	12	88
Economic	14	86
Sales markets	58	42
Real/potential competitors	10	90
New technologies	8	92

The kind of information resources used can be further defined as follows:

Type of Information	Use	Do not use	All-Russia Edition	Local Edition
Mass Media	89%	11%	60%	51%

Type of Edition	Use	Do not use
Specialized	35%	65%

Information Service of other companies	Personal contacts	Official contact points	Informal official contacts	Information Service Centres

3%	91%	43%	27%	24%

Frequency of using information	Seldom	Frequent	Continuous
	61%	21%	18%

Frequency of using information when charged	Seldom	Frequent	Continuous	Never
	11%	8%	5%	76%

Knowledge of information through computer networks	Know of possibiilty	Have heard of possibility	No knowledge of possibility
-	18%	24%	58%

Percentage of Users of network information	Use	Do not Use
	6%	94%

The above show that it is necessary for the management of enterprises to take the following important criteria into account, based on foreign experience:

- Operative information on the general economic situation in the country (including exchange rates, credit rates etc.);
- business information on market conditions and forecasts on market development;
- information on legal conditions affecting activities;
- information on new technologies;
- information on supply and demand, partners and clients.
  Thus, the main focus of an information service would need to be on the following:
- financial information;
- commercial information;
- legal information;
- foreign trade information;
- business news, including analytical and survey information;

- electronic editions of forms of mass media;
- advertising information;
- information about the information available.

The nature of information available should provide the user with an effective means by which decisions on various activities can be taken, for example, marketing, puchasing, sales, import-export opportunities, financing availability, state of the market and partnership opportunities.

3.1.4 Main features of Russian sources of information

Activities began in the early 1990's to set up a structure of information resources, and commercial access to data banks. This was started to satisfy the needs of commodity exchange brokers and small enterprises to facilitate their activities.

However, at the stage of development where a standardization of the information had been achieved, including some repetition, a decrease in the exchange of information occurred leading in turn to a decrease in the use of the available information. During the formation stage, various sources of information actively participated, including:

- information and news agencies;
- specialized commercial information agencies;
- publishing houses, newspapers and specialized business journals;
- state management bodies;
- unions and business associations, public organizations;
- analytical and research organizations;
- centres and generators of information;
- centres for processing and distribution of information;
- results of market infrastructure studies.

One must note that from the various types of information supplied by the above sources, state bodies have exclusive access to certain information which they use for their own databases and thus have a monopoly on this information.

A large degree of significance is attached to general information, which is perhaps of more primary value, but at the same time has a smaller demand for a number of reasons. The main suppliers of general information of a business nature are centres for processing and disseminating information using their own databases.

Even though there are a number of information structures using indigenous computer science knowledge, to a certain degree based on western experience and models, basic domestic sources of information have a number of features which tend to hinder development of a fully-fledged information sector. These include:

- the preservation of a departmental character of economic information, accrued over the years in state management bodies, the absence of rules and regulations for its acceptance and the ensuing monopoly on its use;
- irregular updating of the database files;

- the appearance of significant files in a non-electronic form ;
- illegal sale of information files to commercial companies, which then resell them without indicating the source of the information;
- the need to use perhaps irregular methods in order to obtain information due to a lack of co-operation of the participants to provide the information, thus leading to the establishment of small companies specializing in acting as intermediaries between potential clients and sources of information;
- the development of market relations which negatively affects the quality of information;
- work performed by information firms with easy access to official information which may not meet the requirements of the various clients;
- a lack of a stable system of data acquisition resulting in incomplete information, irregular updating of files and lack of reliability;
- sources of information are not always given, providers of information files deny responsibility for the reliability of information;
- non-uniform distribution of information on various sectors;
- the majority of available information is created based on easily accessible information and not oriented to client's needs;
- lack of standardization for contents of information files.

3.1.5. Ways and means of distributing information

Business and commercial information in Russia today is available in printed form; on magnetic tapes; through on-line accessible databases; and through a type of database on floppy disks with a specially adopted user interface.

The efficiency of using specific information resources could be achieved through representing information within the framework of a computer network enabling the realization of commercial operations in an electronic manner.

3.2.   An Overview of the Structure of Telecommunications in Russia

The majority of SMEs are not located in the central regions of Russia, while nearly all the major companies engaged in information services are located there. The electronic method of gathering and distributing information is the most effective, and cost-efficient, in the country. The telecommunication structure in the country is well-developed, but not totally adapted to providing information on SMEs. Only a small percentage of the traffic of the Russian Telecommunication Network is activated by access to information sources. Appendix 1 shows a list of cities with a reliable telecommunication link via the IASNET/ROSPAC networks. Figure 1 shows a simpified structure of the telecommunication system, including regional subsytems. A summary of the regional and local telecommunication networks which can also be used to provide an information support for SMEs is shown in Appendix 2. A list of the on-line information hosts connected to the X.25 network is shown in Appendix 3.

3.3   Structure of Information Telecommunication Subsystem to support the SME industrial Information Service

The main aim of activities was to design a standard information module which could be easily applied to the existing telecommunication and information infrastructure in the country with regard to the industrial information support requirements of SMEs. These information modules need to have technical and consultancy support, and to be 'open' for future modernization and integration.

The information telecommunication subsystem developed has been based on the conception of information modules comprising three parts. The nature of these modules needed to be similar to the distribution and technical power facilities of the regional telecommunication sites. The module thus developed comprises hardware, software and administration in order to provide a regional information service for SMEs.

The components are the following:

1. Hardware for facilitating telecommunication access, provision and management of information.
2. Software databases for provision of information, presentation of information, accounting etc.
3. Technical equipment, including fax, photocopier, printers, telephone connections etc.
4. Administrative support including processing of contracts with information suppliers, telecommunication networks; correct form of presentation of information; statistical data on number of requests processed; methods governing the handling of information.
5. Technical and consultancy assistance.
6. Training support.

Based on experience gained, it would appear that three types of modules would need to be developed: Type 1 - small; type 2 - medium and type 3 - central.

3.3.1 Information Module Type 1

The technical structure of this type is shown in Figure 3. The main features and functions can be described as:

A. End-user on-line information service for clients in regions with an underdeveloped commercial and telecommunication structure.
B. Gathering of local, regional information and on-forwarding to modules types 2 and 3
C. Arrangement of e-mail and global fax services.
D. Dealing with client enquiries, formulating them for action by type1 or type 2 modules.
E. Provision of consultancy services and information assistance to local clients.

3.3.2. Information Module Type 2

A technical structure of this type of information module is shown in Figure 4. The main features and functions can be described as:

A. End-user on-line information service for clients in regions with a developed commercial and telecommunication structure.

B.   Gathering of local, regional information and information from type 1 modules, processing of such information including its analysis and on-forwarding of such to type 3 modules.

C.   Contacts with mass media, preparation of information in printed, graphic and magnetic formats.

D.   Analytical processing of information.

E.   Analysis of information enquiries from regions and matching it with information resources.

F.   Gathering of information from state, regional and other non-commercial bodies.

G.   Administration of regional information systems.

H.   Arranging e-mail, global fax, telex and telegraph services.

I.   Dealing with client enquiries, formulating them for action by type 3 modules.

J.   Consultancy and information assistance to clients.

K.   Interaction with other information companies, libraries and state departments.

3.3.3. Information Module Type 3

The structure of this module would be similar to type 2, whereby the difference would be in its influence and distribution of the activities shown in type 2 modules. Type 3 modules would need to be located in cities which play an important role in the economic and political life in the country. The main focus of its activities would need to be on the analytical processing of information received from modules 1 and 2 and the distribution of the results back to the modules 1 and 2.

3.4   The design and testing of a type 2 information module, based on the Olvit Network Information System

After analyzing the technical equipment and administrative strucutre of the JSC OLVIT, the decision was taken to construct a type 2 information module. According to the structure of the type 2 module, the additional file and communication server was integrated with a set of CD ROM drives and modems to the existing telecommunication and information system of the JSC OLVIT. The installation of Novel Netware on the existing system was undertaken with the corresponding communication software. The structure of the system is shown in Figure 4.

The additional equipment and software integrated into the Olvit system is shown below:

1.	Modem Sync. Motorola Codex 3268, v.34
2.	CD-ROM disk drives
3.	SCSI-card for CD-ROM disk drives
4.	Novel Netware v. 3.11

On the X.25 Information Server and File Server, the databases shown below were installed. The set chosen was defined following an analysis of the interest of SMEs to various information sources and the number of connections to Olvit's X.25 information server.

No.	Database Description
1..	Banks of Russia
2.	Financial Market in Russia
3.	Service and Wholesale Trade Enterprises
4.	Archives of Moscow Interbank Currency Stock
5.	Legislation, federal taxation and laws

Access to the X.25 server is possible via the X.25 Network on the DNIC 25029904070300 and via INTERNET on address 194.190.50.2:2005. At present, access to the databases on the file server is only possible via INTERNET (TCP/IP), on address 194.190.50.19.

The information module was tested for a period of one month on telecommunication sites in St. Petersburg, Perm, Novosibirsk and Usuriisk. Access to the integrated module is reliable and the link is around 9600 bps. It is planned to install this together with additional information sources on Olvit's WWW-server, supported by Informix software, during February-March 1996.

4. Annexes

Appendix 1
A list of cities (not full) connected to IASNET/ROSPAC network

Abakan	Krasnoyarsk	Rostov-on-Don
Arhangelsk	Kurgan	Ryazan
Asbest	Kursk	Samara
Astrahan	Kyngysep	Saratov
Barnaul	Langepas	Savtevkar
Belgorod	Lipezk	Severodvynsk
Berdsk	Œagadan	Smolensk
Biysk	Magnitogorsk	Sochy
Brazk	Minsk	South Sahalinsk
Bryansk	Moscow	St.Peterburg
Cheboksary	Murmansk	Stavropol
Chelyabinsk	Mynusynsk	Surgut
Cherepovez	N.Urengoy	Taganrog
Chernogolovka	Nahodka	Tambov
Chyta	Nalchyk	Tolyaty
Dubna	Norylsk	Tomsk
Ekaterinburg	Novgorod	Tula
Elysta	Novgorod	Tumen
Engels	Novosibyrsk	Tver
Enyseysk	Nyjniy	Ugorsk
Habarovsk	Nyjniy Tagyl	Ulan-Ude
Irkutsk	Obnynsk	Ulyanovsk
Ivanovo	Omsk	Upha
Joshkar-Ola	Orenburg	Ussuriysk
Kaluga	P.Kamchatsky	V.Luky
Kazan	Penza	V.Ustug
Kemerovo	Pereyslavl-Zalesky	Velsk
Kezel	Perm	Vkadyvostok
Koelga	Petrozavodsk	Vladymyr
Kostroma	Krasnodar	

Appendix 2

	Telecommunication Network	Company owner
1		
2	IC-TRS	JSC TRS
3	COMPNET	SELF
4	CONTRACT/ANCOM NET	JSC ANALITIC-TC
5	ENANET	JSC AEN
6	EUNET/RELCOM	JSC RELCOM
7	FIDO-NET	
8	GTS-INTERLINK	JV INTERLINK
9	INFONET	JV INFOCOM
10	MED-NET	COMPUTER CENTER OF HEALTH MINISTRY OF RUSSIA
11	PILOTNET	JSC KUDICH
12	PTTNET	PTT-TM
13	RUSINTECH-NET	JSC RUSINTECH
14	SEDAB	SEDAB
15	VIDEOTEXT IN MOSCOW	JSC INTERKVADRO
16	AIST	VNTIC
17	ASPD	FT-CENTER
18	AEROCOM	JSC AEROCOM
19	VIDEOCOMMUNICATIONS	KOPRIS AND M
20	GLASNET	GLASNET
21	IASNET	JSC IAS
22	IKS MIR	JSC MIR
23	INFOTEL	JSC INFOTEL
24	ISKRA-2	ASVT
25	ISTOK	BAKOM
26	ITAR-TASS	ITAR-TASS
27	COMSTAR	COMSTAR
28	TELECOM	TELECOM-SERVICE
29	MMTEL	JSC MMT
30	NEFTECOM	NEFTEPRODUCT
31	PIENET	PIENET
32	RICO	JSC RICO
33	ROMIS	ROMIS-ALFA
34	ROSNET	JSC RTS
35	ROSPAC	JSC ROSPAC
36	RUSSIKA	JSC RUSSICA
37	ROSCOMSTAT NET	STATINFORM
38	SITEC	JSC MASTAC
39	SOVAM TELEPORT	JV SOVAM-TELEPORT
40	SPRINTNET	SPRINT
41	TV-INFORM-BUSINESS	PROGRESS
42	TECOS	TECOS LTD.
43	TELEBYTE	TRADE ELECTRONICS
44	TELEPORT-TP	TELEPORT-TP
45	TRANSINFORM	JSC TRANSINFORM
46	URALWES	JSC INFORMATION TECNOLOGIES

Appendix 3

	HOST NAME	COMPANY OWNER
1	2COM	TRS
2	ACCOUNTING SYSTEM BBS	JSC SATURN
3	BBS STREAM	URAN GROUP
4	BIZLINK	VIMCOM
5	BORLAND RUSSIA BBS	BORLAND
6	COMPUTER-SECURITY NETWORK	BEZOPASNOST
7	ECON	ELVIS+
8	ELEPHANT	EVRO-ASIAATSKAY FPK
9	ELM NET	INFOBROK
10	FOLIANT ON-LINE	MGTS SIU
11	GEONET	MOSCOW INTERDATA
12	MEBTI	MEB
13	RCRME	RTSB
14	REMBROK	ORGLAND
15	AISON	UNION RAN
16	AEN	AEN
17	VIMI	VIMI
18	VINITI	VINITIGOLDIS
19	GOLDIS	GCC RAN
20	GPNTB	GPNTB
21	INSYTE	INSYTE
22	INFORMPRIBOR	INFORMPRIBOR
23	KOMINFO	KOMINFO
24	KOMPASS-BD	USMOS KOMPASS
25	REMART	RKI
26	OLVIT	OLVIT
27	TECOS	TECOS LTD.
28	USIS	INTRALEX

Figure 1.

The simplified structure of telecommunication system including regional subsystem
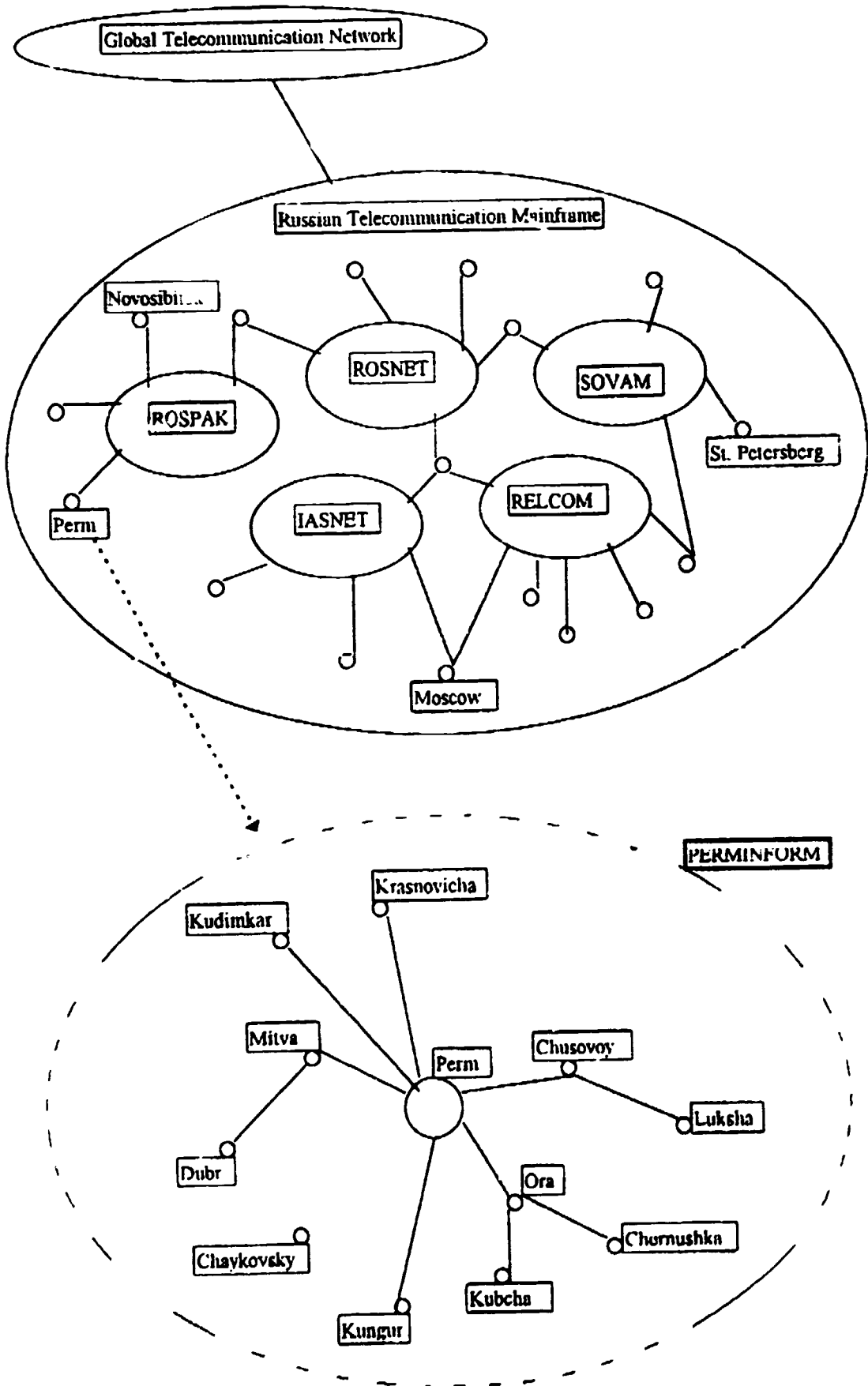
Figure 2

The technical structure of Type 1 Information Module
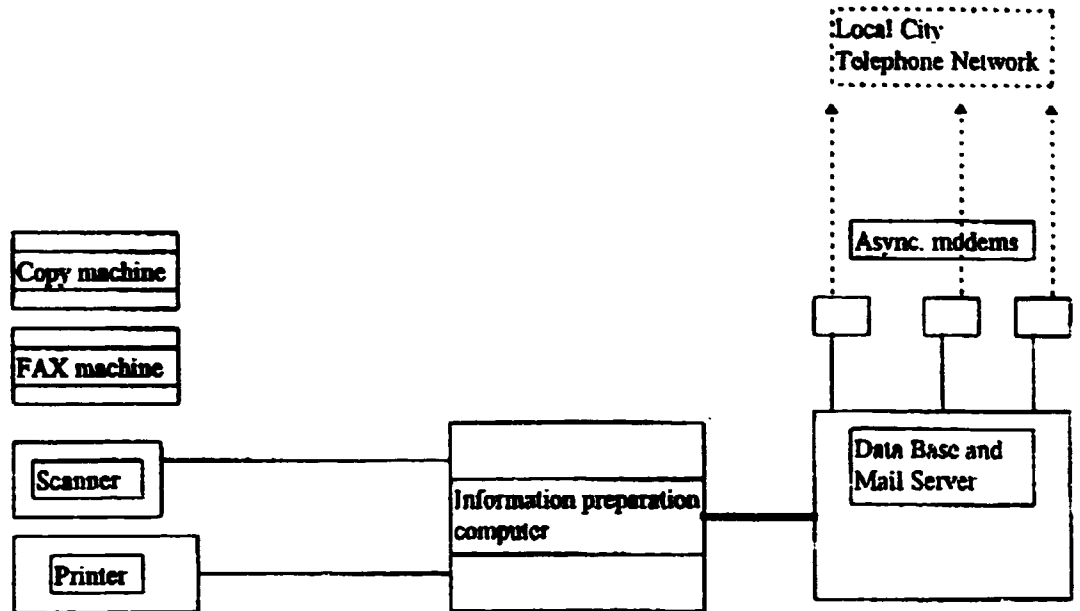
Figure 3

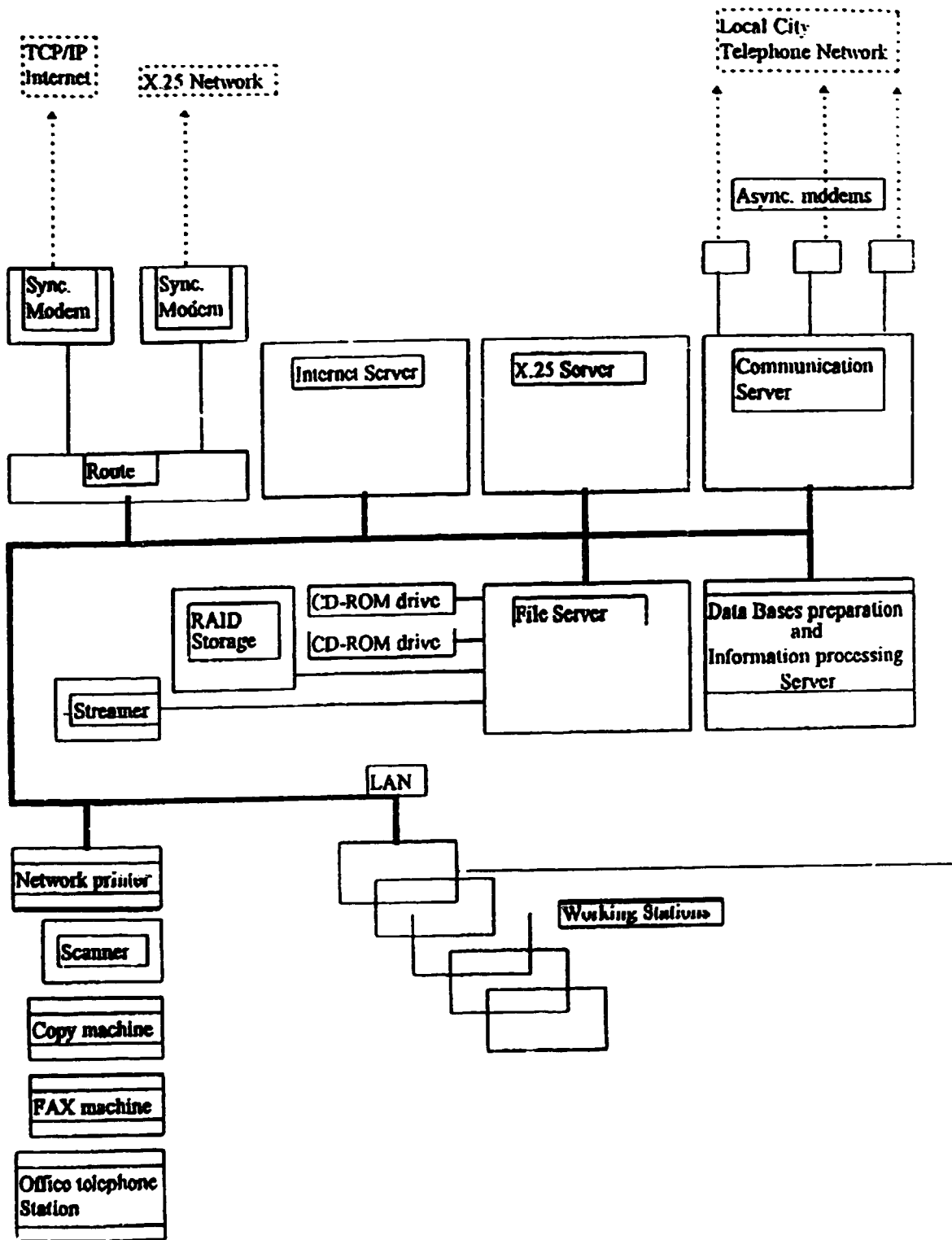The technical structure of the Type 2 and Type 3 Information Module

Figure 4.