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FINAL REPORT
ON
UNIDO WORKSHOP
FOR
ASIAN, CENTRAL ASIAN,
AFRICAN & ARAB COUNTRY REPRESENTATIVES
FROM
TELECOMMUNICATIONS INDUSTRY
NEW DELHI
07 - 13 FEBRUARY, 1996

REPORT OF TCIL AS CONSULTANTS TO UNIDO

AUGUST, 1996

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(A Govt. of India Enterprise)
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I N D E X

CHAPTER - I

CHAPTER - 1

1. INTRODUCTION

GENERAL

1.01   UNIDO (United Nations Industrial Development) Organisation, Vienna) engaged TCIL (Telecommunications Consultants India Ltd., New Delhi) as consultants to UNIDO to identify the relevant industrialists in the telecom industry and the users group from the selected countries as given below to take part in the UNIDO workshop for promoting industrial partnership initiative through participation at WISITEX 96 Exhibition taking place during 07-13 February, 1996 at New Delhi.

LIST OF SELECTED COUNTRIES

Asian Region

Bangladesh, Cambodia, Lao, Myanmar, Vietnam and Indonesia.

Central Asian Region

Kazakhstan, Kyrgysztan, Turkenistan and Uzbekistan.

African Region

Benin, Botswana, Ghana, Mauritius, Mozambique, Nigeria, Zimbabwe, Angola, South Africa and Zambia.

Arab Region

Kuwait, Oman, Saudi Arabia, Yemen & Syria.

1.02   The purpose of the task assigned to TCIL was to develop closer cooperation between India and other Asian, Central Asian, Arab and African countries in the field of telecommunications manufacturing and its users.

The primary task assigned to TCIL was also identification of the areas of the industrial cooperation both prior to and during the workshop.

1.03   The UNIDO workshop was in continuation of a number of activities supporting the development of telecom industry. Similar exercise had earlier been done wherein the workshop was organised during ELECTRONICS 90 for the African and other countries' representatives from telecom industry. As a result of this workshop in 1990 a number of Memorandum of Understandings were signed between the Indian companies and the African & Arab companies for setting up manufacture of some of the items. There has been some industrial development in some of the countries in telecommunication field which was non-existing earlier. The workshop was also contemplated as a further step in the on-going UNIDO programme offered to industrialists seeking to initiate for extending their long term

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cooperation with counterparts in other developing countries.

It was also contemplated that this workshop will provide the means through which India, other countries of the Asian region as well as African, Arab and Central Asian countries can discuss partnership initiative through organised bilateral discussions.

1.04   With the objective in mind, the task assigned to TCIL was as follows:-

a)   To identify in each of the above-mentioned countries relevant industrialists and senior government officials in the telecommunications industry field who would be interested in participating in the workshop for promoting industrial partnership initiatives through participation at WISITEX 96, taking place during 07-13 February, 1996 at New Delhi, India.

b)   To promote this activity with potential investors, especially from the Arab region and secure their participation at this event.

1.05   Modalities adopted by TCIL for identification of the industrialists/user group officials were as follows:

a)   Team comprising of following officers was sent to Bangladesh, Cambodia, Lao, Myanmar and Vietnam.
1)   Mr. Bhushan Lal Arora,
        General Manager.

2)   Mr. Madan Kumar Srivastava,
        General Manager.

b)   Team comprising of following officers was sent to Kazakhstan, Kyrgyzstan, Turkmenistan and Uzbekistan.
1)   Mr. Surendra Kumar Bansal,
        Group General Manager.

2)   Mr. Parveen Kumar Khokha,
        Senior Manager.

c)   Mr. Ashoke Kumar Neogi, Group General Manager was sent to Syria.

1.06   For other selected countries, a letter was written all the Project Directors of TCIL in Africa and Arab countgries requesting them to discuss with the telecom administration of those countries and

identify the industrialists and some officers of the user group who could be invited for participation in the said workshop. They were also intimated that UNIDO can only cover the cost of the hotel accommodation/breakfast for duration of the workshop. A copy of the terms of reference of UNIDO contract was also sent to the Project Directors.

1.07   Two teams from the TCIL HQ were to leave for the respective countries in beginning of December, 1995 but there was a problem in getting visas from the embassies of these countries in India. After great pursuation and the letters from UNIDO, the visas particularly for the Asian countries could be available only by end of December, 1995. Accordingly the teams visited these countries as per the programme enclosed as Annexure A & B.

1.08   In most of the countries in Asian and Central Asian region, the telecom sector has not yet been opened to the private. The discussions were accordingly held with the concerned officers of the telecom administration to assess their needs for the future growth and development of the telecommunication and

the specific project if they have any for which the cooperation can be had with the Indian companies. The recommendations regarding the identification of participants were made in consultation with the local telecom administration to suit their needs. UNIDO, Vienna and their local offices of UNIDO/UNDP were kept informed of the results of the mission by the experts throughout the visit.

During visit to these countries a copy of the brochure of the WISITEX 96 was also given to the concerned persons in the telecom administration of each country.

1.09 To identify possible Indian parties who could participate in the bilateral discussions on transfer of technology, setting up of manufacture of the telecom items in the developing countries with mutual cooperation, TCIL addressed to different telecom manufactures/service associations.

1.10 Based on the recommendations made by TCIL, UNIDO sent invitation letters to about 50 persons in all the countries. However, due to pre-occupation

by the identified participants most of them could not attend the workshop despite the fact UNIDO had agreed even for bearing the air fare for the delegates from the Asian countries, Central Asian countries and some of the African countries. However, in total 20 participants could come to New Delhi for the workshop.

1.11   During the workshop these delegates were taken to the exhibition particularly pertaining to Information Technology and telecommunication. There was lot of enthusiasm among the delegates during the workshop. The status of telecommunication in the countries visited by TCIL team and their future requirement for growth are outlined in following pages.

CHAPTER - II

2. ASSESSMENT OF THE NEEDS OF IDENTIFIED COUNTRIES FOR TELECOMMUNICATION EQUIPMENT AND ITS SERVICES

GENERAL

2.01   Most of the countries in the world today have realised that telecom is one of the basic infrastructures for the socio-economic development of the country. These countries have, therefore, embarked upon sizeable programmes for expansion and modernisation of the telecom network. As the technology in the telecommunication has changed/changing very fast, these countries are now jumping to the latest technology.

2.02   As any investment on industrial undertaking is to be on sound financial returns, economic viability and quantum of production assumes great importance, the attempt should be to have as high volume of production as possible to reduce the cost of the production on unit basis. The quantum of production being linked with the market potential. This study was based on the discussion with the

telecom administration/authorities and various publications, documents, country papers, study reports etc.

2.03   In addition to the requirement for manufacture of telecom items, there was also a need for the development in information technology, training and other related matters.

2.04   The country profile indicating the telecommunication plan and the needs for the various products and services is briefly explained below.

1)   **Vietnam**

Vietnam has been featuring in international business press as a emerging tiger in the South East Asian Region. Since the lifting of the IMF Veto in 1993 and of the US trade embargo in February, 1994 there has been a sharp upsurge in trade and investment activity in the country. The Government of Vietnam announced the policy of economic liberalisation to transform the hitherto central planned economy into macro economy. After some initial outstanding real problems

the period since 1990 has seen consistent for trade and investment policies. The result has been high growth of GDP which is at present more than 8%. The country has planned for GDP growth of 9-10% during the year 1995-96.

The country has about 260,000 telephone lines against the population of 74 million which is about 3 telephones per thousand. They have planned growth of telecommunication to about 3-5 per 100 by the year 2000. There is a growth rate of 2.2% in population by the year 2000. The total population is estimated to be more than 80 million by end of century. With a 3% density, which is minimum projected by Govt. of Vietnam, the total number of lines required to meet the target will be 2.4 million against the present capacity of 260,000 lines. They will have to add 2 million lines during the next five years. The total funds requirement shall be around 1.2 billion U.S. Dollars. A number of big telecom companies have already set up some joint venture companies in Vietnam to meet the growing need of the equipment. The officials in telecom administration to

whom the TCIL team had met and discussed indicated the need for training of their personnel to take up the task of such a massive expansion. The need was also expressed for setting up manufacture of Rural Automatic Exchange of C-Dot design.

Vietnam is also formulating a policy for information technology and electronic industry. They have made a proposal for a project by the Agency for the National Programme On Information Technology (ANPIT) for the Ministry of Science, Technology and Environment, Ministry of Heavy Industry and State Planning Committee to be supported by UNIDO.

Summary of the Project

During 1995-96, Vietnam government will be reshaping its policies for industrial development in the light of changes in the country's over all development strategy and its new economic position among the South East Asian Nations. The project is expected to supply highly relevant information on the

variety of strategies for trade and foreign investment by multinational firms based in East Asia, North America and Europe. Following three main questions will guide the project work.

i) In order to develop a healthy IT and electronics industry, what should Vietnam do - and, given current constraints, what can Vietnam do ?

ii) How can Vietnam accomplish the task of creating a viable industry based on advanced electronics and information technology ? How can Vietnamese firms and institutions link up better to the international production and distribution networks in electronics ?

iii) How much and what kind of investments - by Vietnamese firms, by the Vietnamese government, and by foreign investors - are necessary to promote and sustain an advancing IT and electronics industry ? How can Vietnamese firms as well as foreign firms operating in Vietnam

benefit from the current changes in the South East Asian and global electronics industry ?

The government has formed a Steering Committee for this project. The concerned officer in the Steering Committee was interested to see the various aspects of IT industry in India and to discuss with the various IT companies which could help their project on the IT industry.

The team had also discussed with the Chamber of Commerce & Industry and requested them to nominate some industrialists for the exhibition. They were quite positive to our request and told us that they would circulate to their members. They, however, told us that even though there had been surge of multi-national companies in Vietnam, private sector in Vietnam in the field of telecommunication has yet to come up.

2) **Lao People's Democratic Republic**

Lao People's Democratic Republic is relatively a small country with the population of around 4.6 million.

Regarding telecommunications, after the revolution in 1975, no large scale rehabilitation nor improvement have been carried out until a separate company known as EPTL was established as a autonomous enterprise. In 1986 EPTL implemented the Telecommunication Rehabilitation And Technical Assistance Project (Telecom - 1) After the completion of Telecom - 1, the second telecom project (Telecom - 2) had been planned and executed. As a result of which obsolete facilities had been replaced and there had been substantial improvement in the service. As per the discussion with the concerned officers in the EPTL, Ministry of Communications and also the Chamber of Commerce, we were told that the service have greatly improved from 1991-94.

The total number of lines after the Telecom-2 Project is around 75,000. Both the Projects Telecom-1 and Telecom-2 costing about US Dollar 4 million and US Dollar 51 million

respectively have been completed with the IDA assistance, World Bank and bilateral credits from Japan, France, Australia and Germany. Some portion of this project has also been completed with the assistance of UNDP. The planned objectives for the expansion of the telecom network is to achieve the density of about 1 per 100 before the end of the century. They have undertaken the Telecom-3 Project to increase the capacity and also to modernise the system by putting up the digital expansion transmission system including the optical fibre system. In addition to the Telecom-3 Project, many other activities have been proposed for implementation over the next three years which are as follows:

i)   Expansion of cellular mobile service.

ii) Establishment of data communication
     network.

iii) Public card phone service.

iv) Establishment of a company to provide
     terminals.

They are trying to engage the private sector

service and maintenance. As per the discussion the private sector has not yet been geared up to undertake the manufacture. To start with they want to import the equipment and provide the after sales service support. The officials from EPTL and Ministry of Communication had shown keen interest to come to India for workshop to see the experience gained by India towards the development of the telecom system and broadening the manufacturing base. The Ministry of Communications was also thinking to have the manufacturers in a joint venture company. Even for operating the services they had planned to have the licensed operators in form of BOT. Some private companies are already operating there for providing the cellular mobile service. After discussion they showed interest to cover the following:

i) To see the process of liberalisation/ privatisation in the field of telecomm-unication in India.

ii) To see the suitable network for Rural Telecommunication.

iii)   To see the facilities for training of their people.

3)   **Cambodia**

Cambodia passed through a political tumultuous year after the signing of the peace agreement on 23.10.1991. This resulted in formal end of 13 years of war. The population of Cambodia is about 9 million. The telecom system is not in a very good shape. However, the attempts are being made to upgrade and expand the system. Australia Overseas Telecommunication began creating the whole new communication infrastructures installing several thousand new lines. Thai companies had also one contract for mobile phone service. Present telephone services are mainly concentrated in the Phnom Penh i.e. the capital of Cambodia.

There is no manufacturing facility for telecommunication item in Cambodia till date. It is because of the fact that the requirement for these items is very very

small. The private sector still has not come up. The team had discussed with the Under Secretary of Ministry of Communications who decided to depute a telecom officer to India for the said workshop. The areas on which they wanted some information and to also have a dialogue with the concerned agencies in India are as follows:

i) To see the process of liberalisation/ privatisation in the field of telecommunication in India.

ii) To see the suitable network for Rural Telecommunication.

iii) To see the facilities for training of their people.

4) **Union of Myanmar**

Myanmar is the largest country on the main land in South East Asia. Its population is about 43.92 million. Public telecommunication facilities in Myanmar are States owned which are under the control of the Ministry of Communications, Posts & Telegraphs (MPT).

Upto the early 1970, MPT had about 17400 lines. MPT launched its first telecommunication project in 1977 which was completed in 1979. With this the number of lines were expanded to 24200. MPT launched the second telecommunication development project in 1985 which was completed in 1987. With this the total lines increased to 67400. With the expansion of the number of lines, some more STD routes were also added. After these two large scale projects, MPT has continued extension of the network. At the end of September, 1995, the total number of lines was increased to more than 154,569 which works out to a density of about 0.33%.

Myanmar also has the cellular mobile telephone system which was started in Yangoon in December, 1993. The capacity at present is 2070. Due to the practice of market economy in Myanmar both domestic and international telecommunication services were being considered as the major infrastructure for further advancement of socio-economic

activities. MPT has got number of plans for expanding the network and also have the latest state-of-the-art technology in switching and transmission. Though they have taken the considerable steps to modernise the system, it is still far from satisfying the growing demand of the service. Growth of economy, the new business enterprises, border trade at the development of national races in the border area will put pressure amply to expand and modernisation of system in the national/international level. The team had discussed with the concerned officers in MPT. They were keen to visit India and showed interest in the following areas:

i)   To see the process of liberalisation/ privatisation in the field of telecommunication in India.

ii)   To see the suitable network for Rural Telecommunication.

iii)   To see the facilities for training of their people.

5)   **Bangladesh**

The population of Bangladesh is around 120 million. The total telephone capacity upto 1993-94 was about 300,000 giving an average of 0.22 lines per 100. The growth of local telephones in the last five years was only about 8000 lines (average) per year. To meet the surge demand of telephones as well as qualitative improvement of telecom service, Bangladesh Telegraph & Telephone Board (BTTB) has made a target to increase the country's telephones to 800,000 lines by the year 2000. They hope to attain the density of about 0.6 telephones per 100. A number of projects had been undertaken by BTTB to expand and modernise telecom system. Their efforts have been supplemented by the private companies in the following areas:-

a)   **Mobile Telephone System:**

In 1989 a private company was authorised to install, maintain and operate mobile telephone system. This company has already installed 7500 lines capacity

exchange. The exchange provides facilities for both domestic and international calls.

b) Two private companies have been given license to install, operate and maintain digital telephones in 390 thanas of the country. One company namely Bangladesh Rural Telecom Authority (BRTA) has been given 199 thanas. While the other Integrated Services Ltd. has been given 191 Thanas for the other areas. BRTA is the first private telecom company in Bangladesh which started operation in August 1990. They hope to complete the entire job of providing the service in the 199 thanas by 1996. The TCIL team had met the concerned officers in BTTB, Ministry of Communication and also Chairman of BRTA. The team had also met the Chamber of Commerce. They were very keen to depute their persons to participate in the workshop/exhibition but none of them could make it because of the political situation in the

country. However, as per the discussion they had shown interest in the following areas.

i) To see the process of liberalisation/ privatisation in the field of telecommunication in India for which they had started the process.

ii) To see the suitable network for Rural Telecommunication.

iii) To see the facilities for training of their people.

2.05   Central Asian Countries

1)   Uzbekistan

Uzbekistan became a sovereign and independent country and joined the commonwealth of independent Stats in December, 1991. Total area of the country is about 447.4 thousand kilometers. Its population is more than 22 million.

Communication system represents a system of line and station facilities of post,

telephone, telegraph, telecommunications and radio-communication.

The whole system is under the control of the Government. The government is not thinking for privatising at the moment due to certain political reasons. Till today, no private industry exists in the telecommunications. That is why, no industrialist was keen to start the telecommunication industry till the Government decides its policy on the matter.

2) **Kazakhsthan**

Formerly called as Kazakh SSR of USSR, it declared itself independent on December 16, 1991. It has a total population of 17 million.

Kazakhtelecom controls a huge network of telecommunications, capable of satisfying of the users' demands throughout the great territory of Kazakhstan in the telephone and telegraph, radio and television services.

Kazakhtelecom includes:

- Hundred of town and thousands of rural telephone exchanges having over 2 million lines.

- Automatic trunk telephone exchanges capable of round-the-clock connecting any user with any city or town within Kazakhstan or the CIS, and also with all the countries of the world.

- Quickly developing network of cellular telephone insuring stable connection with mobile users.

- A well developed network of cable, coaxial and optical fibre, radiorelaying lines and satellite systems.

- High-power radiotransmitting stations insuring the transmission of radio programmes in all the bands, in many languages of Kazakhstan peoples.

- In a short period of time a huge network was created.

- Over 5 thousand high-power and low-power television transmitters, among those the metropolitan TV centre with its unique 372-meter aerial tower on Koktube mountain, transmitting its programmes in 12 frequency channels.

- All these units equipped with modern complex radio and electronic equipment are manned by 50 thousand strong staff of engineers and technologists. The National Joint-Stock company Kazakhtelecom is ready to provide all kinds of communication services, radio and TV programmes any time of the day or night, in any weather and from any spot in Kazakhstan.

- In order to provide the citizens of the country with TV communication services 84 high-powered television transmitting stations and over 1500 small transmitting and relaying stations are working now. Television programmes relaying on the territory of Kazakhstan

is arranged through the network of relaying lines, over 10 thousand km long, the extant satellite television system Zharyk (the first programme of the Republic TV, with over 360 receiving stations), and also through the systems of satellite television Moskva and Ekran (ostankino progammes, Russian Television with over 900 receiving stations).

- Radiocommunication services are provided by a large network of transmitting stations in all the frequencies: long-wave, middle-wave, short-wave and FM bands. In 1994 new development network was undertaken in order to enlarge and spread the network. It will require equipment of about 70 extant two-progamme transmitting stations and installation of about 500 low-power rural transmitting stations, inserting them into already working relaying stations network.

- The development of satellite telecommunications system was given priority in recent years.

- New telephone channels were established to Australia, Great Britain, Germany, Turkey, France, Israel, Italy, Korea, Czekhia, Sweden and Japan with connections to other states in the world.

- The constructor of two terrestrial receiving stations of satellite telecommunication network has been finished; of standard A Intelset in Almaty and of standard B in Akmola.

- The National Centre of Satellite Communication was created. Modernisation of the existent radiorelaying lines was launched with the aim of installing the new equipment working on the digital transmission principle. Programmes of further satellite telecommunication systems development have also been worked out.

- In the country two major communication centres are functioning - in Almaty and in Akmola. Telecommunication networks embrace practically all the settlements and enterprises of Kazakhstan. The network includes 2840 automatic trunk telephones.

- Trunk line communication in the Republic goes through the cable and radiorelaying lines, controlled and strengthened by different transmitting equipment.

- Optical fibre line Akmola - Almaty and digital transmission line Akmola - Petropavlovsk are being constructed. Construction of the optical fibre line within the framework of the Transasian-European optical-fibre line project is being carried out (TAE).

3) **The Kyrgyz Republic**

The Kyrgyz Republic joined the Common Wealth of Independent States on its formation in December, 1991. Its population as per census of 1992 is 4.5 million.

Regarding telecommunication there are about 333,600 lines which works out to about 7.4 lines per hundred. 72% of these lines are installed in urban areas and the balance 28% in the rural areas. 25% of the installed lines are in business and government agencies.

The existing facilities are not sufficient for the international access. An automated international access is available for only a small number of subscribers i.e. less than 100 who are connected to a satellite link to the Turkish PTTs and Ankara International Exchange. This gateway having 240 trunk circuits and 2000 subscriber lines has technical incapability with the Kyrgyz analog network. As currently configured the system is inadequate to meet customer demand. Consequently the majority of outgoing international traffic is handled through operators' assisted calls via Moscow or Ankara which typically take 3-10 hours to materialise. This waiting period is unacceptable for subscribers. More than half

of the local network equipment has reached the end of the economic life of 20 years or more and badly needs replacement. The technical standards of the equipment already installed mostly do not comply with the existing international standards (signalling) interfaces, terminal equipment, hardware design etc.). The World Bank has made a study to assist the government to achieve the following objectives:

(a)   make priority investments to modernize and develop the telecommunication network (on the basis proposed in the Master Plan) in such a way as to best facilitate the country's economic growth;

(b)   improve management skills to function in a market oriented economy, particularly business and financial analysis skills, create a state-owned joint-stock corporation for telecommunications, and commercialize telecommunication activities:

(c)   establish a regulatory   and policy framework for   restructuring of the sector aimed at enhancing the competitiveness of the main operator, liberalizing   and   opening   to competition key market segments, and attracting over time private sector investment to the sector.

The total project cost is estimated about US $ 31 million which will be mainly utilised for removing bottlenecks in the system for business and other economic activities and improve over all service quality. This will be by way of replacement of the life expired network and also to expand the system for about 69000 lines.

There was a language problem. However, with the help of the interpreter the discussion was held by the TCIL team with the Ministry of Communication, Kyrgyz Republic. Interest was shown by MOC, Kyrgyz Republic in liberalisation taking place in India in the field of telecommunication.

4) **Turkmenistan**

Turkmenistan became republic on 20.07.1991.
Its population is around 4 million.

Telecommunication:

In Turkmenistan the main difficulty for
telecommunication network is a population
concentration in two pockets. That is one
pocket in capital and second nearly 500 km
away. At other places very scarce population
is there. At present about 200,000 lines are
working at different routes. Total
communication is through Moscow for other CIS
States and the rest of the world. As most of
CIS countries are using Bade-Bast port of
Iran, for major shipments and Askabad
(capital of Turkmenistan) will be first entry
point from Chan to CIS countries. Hence
Turkmenistan desires to build up its own
long distance network to take the advantage
of the situation.

2.06   **African Countries**

All the African countries covered by TCIL have also embarked upon the sizeable programme for expansion and modernisation of a telecommunication network. The delegates from these countries were earlier invited by UNIDO in September, 1990. As a follow up action a number of projects have been started in these countries particularly for manufacture of telephone instruments, rural network exchanges and EPABX etc. Most of the countries were interested to send their delegates for this workshop. They had mainly shown interest in the following areas:

i)   To see the process of liberalisation/privatisation in the field of telecommunication in India.

ii)   To see the suitable network for Rural Telecommunication.

iii)   To see the facilities for training of their people.

2.07   **Arab Countries**

The objective of calling the delegates from the
Arab countries was to interact with the developing
countries for investing in the joint venture
companies. All the countries where the TCIL is
working are quite familiar with the Indian
conditions and the process of telecom expansion
plans and modernisation. One officer from TCIL HQs
was also sent to Syria. They showed some interest
in manufacture of telephone instruments.

In addition to the countries identified by the
UNIDO, TCIL also had written to some of the
countries like Srilanka and Nepal requesting them
to send their delegates during this event.

CHAPTER - 3

CHAPTER - 3

3. ABOUT WISITEX 96

3. INTRODUCTION

GENERAL

3.01   Wisitex-96 is organised by Wisitex Foundation, a registered society and trust with more than two decades of experience in organizing international exhibitions and symposia.

The earlier WISITEX events have been acclaimed by world experts as the best in this part of the world and on part with similar global events.

3.02   **Status**

Dates	:	7th to 13th February, 1996.
Venue	:	Hall No.14, Hall No.18 & Hall of Special Display (Hall No.9,10,11A & 11B), Pragati Maidan, New Delhi.
USA	:	Featured Country.
Israel	:	Theme Country.
Germany	:	An Exclusive Pavilion.
Maharashtra	:	Partner State.
Karnataka	:	Featured State.
ICS Japan	:	South East/East Asia Exclusive Pavilion (Japan, Singapore, Korea, China & Taiwan).
Area to be covered	:	App. 30,000 sq. mtrs.

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Total number    :   1200
of Stalls

Present Booking:    Appx. 90%
status
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No. of participating Companies

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Indian          :   700

Foreign         :   550

Expected        :   About  150,000  including  nearly
Visitors            45,000 business visitors.
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3.03   **Co-Sponsors**

1.   United Nations Industrial Development
        Organisation (UNIDO).

2.   Indian Institute of Technology, Bombay.

3.   National Institute of Industrial Engineering,
        Bombay.

4.   United Nations Asian & Pacific Centre for
        Transfer of Technology (APCTT), Delhi.

5.   Madras Institute of Technology (MIT), Madras.

6.   Mahratta Chamber of Commerce & Industries,
        Pune.

7.   Maharashtra Chamber & Commerce & Industry,
        Bombay.

8.   Department of Telecommunications, Govt. of
        India, Delhi.

9.   Department of Electronics, Govt. of India,
        Delhi.

10.   National Research Development Corporation
        Ltd., Delhi.

11.   Telecom Equipment Manufacturing Association
        (TEMA).

12. Indian Institute of Technology, Delhi.

13. The Institution Of Electronics & Telecommunication Engineers, Delhi.

14. Central Scientific Instruments Organisation, Chandigarh.

15. National Productivity Council, New Delhi.

16. United Nations Educational, Scientific & Cultural Organisation (UNESCO), New Delhi.

17. India-China Chamber of Commerce Industry, Bombay.

18. Electronics & Computer Software Export Promotion Council (ESC), New Delhi.

19. International Private Energy Association, USA.

20. India Energy Council, USA.

21. National Informatics Centre, Planning Commission, Government of India.

3.04 **Major Participants**

The list of the companies which participated in the exhibition is given at Annexures C & D.

3.05 In addition to the exhibition, WISITEX Foundation also organised the other events as below:

1) **International Technology Congress**

Concurrently with the exhibition a three-day technology congress was organised. It had four parallel sessions on:

- Telecom International Technology Congress.

- Informatics & Software International Technology Congress.

- Instrumental & Control International Technology Congress.

- Manufacturing Technologies International Technology Congress.

- During the International Technology Congress the countries' seminars and international seminars were also organised.

2) Experts from various countries i.e. USA, Germany, Israel discussed about the availability of the technology and investment as well as their requirement related to sub-contracting.

3) WISITEX 96 also organised the buyer-seller meet to develop future business relation, business links and strik up business transactions.

It was recognised that the UNIDO, one of the co-sponsors of the WISITEX 96 has emerged with an excellent idea to focus and identify business visitors and also promoted general visitors throughout the world to those countries which have maximum potential for concluding business with either buyers and sellers. In a way that will help in the industrial development mainly the telecom and information technology field in the developing countries.

CHAPTER - 4

CHAPTER - 4

4. UNIDO WORKSHOP

4.01   Invitation letters were sent to more than 50 delegates. Most of them had earlier confirmed their participation but because of pre-occupation in their home countries there was some last moment cancellation by most of the delegates. As a result of the cancellation about 20 delegates could only make it in the workshop.

4.02   As a primary objective of the workshop was to investigate ways of promoting technology transfer between the developing countries, the delegates were shown the various exhibition stalls. They also attended the International Technology Congress particularly relating to telecom and informatics & software technology. TCIL also organised their visit to Centre for Department of Telematics (C-Dot) who have developed the digital systems for switching and are also in the process of developing Digital Transmission System. Delegates collected lot of information from this visit. They discussed various issues with the concerned officers of C-Dot.

4.03 **Result of the Workshop**

The WISITEX 96 had been a tremendous success both in terms of developing business and enquiries and creating awareness for advanced technologies in the hi-tech industries. It was estimated that the total value of the business enquiries generated by the participating companies may be more than Rs.25,000 million approx.

The exhibition in five hi-tech subjects namely Telecom, Informatics & Software, Instrumentation & Control, Manufacturing Technologies and Systems and Avionics, Space & Aeronautical systems was participated by 452 foreign companies from 27 countries direct or through their agents in India and 700 Indian companies.

4.04 A three-day Technology Congress with the title "World Visionary Multi-Track Summit' which was organised (8th to 10th February 1996) alongwith the Wisitex-96 was also a great success. Other programmes of this Congress included a presentation by UNIDO on the subject "UNIDO-GLOBAL BUSINESS PARTNERSHIP INITIATIVE", buyer and seller meet of the UNIDO delegates were organised.

4.05   This workshop has exposed the delegates to the emerging trends and scenario in the telecommunication field which will help them to provide advice to their management in formulating their plans and future course of action.

4.06   **Acknowledgment**

TCIL express its thanks to UNIDO, Vienna particularly Mr. Anthony Sphina, for having a faith in TCIL and given an occasion to render its consultancy services in the conduct of international workshop on extending co-operation amongst developing countries to promote telecommunication equipment manufacturing in its activities directed towards telecommunication development world wide during the last 18 years of its operations. This was an occasion when TCIL was called upon to contribute its part for meanigful dialogue amongst the delegates from the different developing countries.

4.07   The arrangements made by UNIDO for extending assistance to the TCIL during this visit to the countries in Asia, Central Asia are gratefully acknowledged. The representatives of telecom

administration, Chamber of Commerce were most co-operative. With these arrangements TCIL team was able to identify the delegates within such a short time.

4.08 The successful outcome of the workshop is to a larger measure attributable to the Organisers of the WISITEX Exhibition particularly Mr. Y.L. Arora, Chairman of the WISITEX. TCIL also acknowledges with thanks the contribution made by the participating countries. With these arrangements TCIL team was able to arrive at proposals within such a short time which was available to the team.

ANNEXURE - A

**Itinery of visits of TCIL Team to
Asian Region**

Sl. No.	Station	Date	Time	Station	Date	Time
1.	Delhi	01.01.96	0010	Thailand	01.01.96	0530
				(Transit Stay)		
2.	Thailand	01.01.96	1030	Vietnam	01.01.96	1215
3.	Vietnam	04.01.96	1030	Laos	04.01.96	1125
4.	Laos	06.01.96	1235	Thailand	06.01.96	1340
				(Transit Stay)		
5.	Thailand	08.01.96	1110	Cambodia	08.01.96	1225
6.	Cambodia	09.01.96	1855	Thailand	09.01.96	1800
				(Transit Stay)		
7.	Thailand	10.01.96	0830	Myanmar	10.01.96	0915
8.	Myanmar	11.01.96	1840	Bangladesh	11.01.96	2055
9.	Bangladesh	13.01.96	2100	India	14.01.96	0010

ANNEXURE -B

**Itinery of visits of TCIL Team to
Central Asian Region**

Sl. No.	Station	Date	Time	Station	Date	Time
1.	India	24.12.95	1300	Uzbekistan	24.12.95	1600
2.	Uzbekistan	27.12.95	2200	Kazakhstan	27.12.95	2300
3.	Kazakhstan	30.12.95	1330	India	30.12.95	1630

(Due to New Year Holidays further visit was to postpone)

Sl. No.	Station	Date	Time	Station	Date	Time
4.	India	14.01.96	1245	Turkmenistan	14.01.96	1530
5.	Turkmenistan	16.01.96	2000	Russia	16.01.96	2200
6.	Russia	18.01.96	1410	Kazakhstan	18.01.96	2130
7.	Kazakhstan	19.01.96	0600	Kyrgysztan	19.01.96	1000
8.	Kyrgysztan	19.01.96	1700	Kazakhstan	19.01.96	2100
9.	Kazakhstan	21.01.96	0200	India	21.01.96	0600

ANNEXURE - C

Name of Major Indian Companies participated in WISITEX 96

1. Mahanagar Telephone Nigam Ltd. (MTNL)

2. Videsh Sanchar Nigam Ltd. (VSNL)

3. Batliboi & Co. Ltd.

4. Control Group.

5. Saha Keil Ltd.

6. SquareD Software Ltd.

7. Motorola

8. Phoenix Contact.

9. Hewlett-Packard.

10. TVS Electronics.

11. Blue Star Ltd.

12. Photonic International.

13. HFCL.

14. National Research & Development Corpn. (NRDC).

15. Birla 3M Ltd.

16. Afro Asian Satellite Communications.

17. Cegelac.

18. Rhode & Schwarz.

19. Instrumentation Ltd.

20. Pepperl+Fuchs.

Name of Major Indian Companies participated in WISITEX 96

21.   Telstra.

22.   Oracle Software.

23.   RPG Telecom.

24.   Global Telesystems.

25.   VHEL.

26.   Solarton Transceducers.

27.   Adino Telecom.

28.   Ericsson Telecom.

29.   Dott. Ing. Scandura.

30.   Shavo Norgen.

31.   Endress & Hauser.

32.   Council of Scientific & Industrial Research (CSIR).

33.   Deptt. of Atomic Energy.

34.   Prime Chemfert.

35.   Fanuc GE Automation.

36.   Punjab Communications.

37.   Arvind Mills Ltd.

38.   Modi Telecom.

39.   Meltron.

40.   CG Schlumberger.

Name of Major Indian Companies participated
in WISITEX 96

41.   TCIL

42.   Pilot Business Machines.

43.   AT&T

44.   ABB Ltd.

45.   C-Dot

46.   WEBEL

47.   Sterling Cellular.

48.   Deutsche Telecom.

49.   Ministry of Railways, Govt. of India.

50.   Bharati Cellular Ltd.

51.   Compaque Computers.

ANNEXURE- D

Name of Major Foreign Companies participated in WISITEX 96

1. DSC Communications, USA.

2. Omron, Singapore.

3. Korea Telecom.

4. Samsung Electronics.

5. Westing House, USA.

6. Fuji Denki Kogaku Co. Ltd., Japan

7. Ono Sokki Co. Ltd., Japan

8. Omron, Japan

9. Dalien Machine Tools Co. Ltd., China.

10. John Enterprises, Taiwan

11. Ontario International Trade Corporation, Canda.