Telecommunication Sector

The telecom sector s main duties include creating telecom infrastructure, fixed telephone services, cellular phone services, data Communication and value-added services. These services are provided , taking into consideration the nation s frequency spectrum at local, long-distance and international levels and with the capability of connecting to global networks.

As of now, in accordance with the rules of the third development plan, the Ministry of Communications and Information Technology is the executor of government affairs in telecom services; and organizing government activities concerning telecommunications revenue generation and development and creating data infrastructure within the policies of the Ministry, are carried out by the specialized parent company, TCI (Telecommunication Company of Iran).

In the government sector, providing fixed and rural telephone services and also creating urban and rural fixed telephone and peripheral provincial transmission networks and providing rural communications are done by the Provincial Telecom Companies. Also, mobile telephone and data communication networks and services are provided by Mobile and Data Communications Companies.

Establishing, developing, maintaining and exploiting the national communications network infrastructure, organizing, guiding and overseeing all affairs pertaining to planning and developing, maintenance and operation the of long-distance and international communications networks are the duties of the Infrastructure Telecommunication Company.

Status of the sector concerning the twelve focal points of the fourth development plan

The telecommunication sector s status concerning the twelve focal points of the fourth development plan is as follows:

Rapid, continuous and stable growth

- Establishing a good atmosphere for absorbing domestic and international capital in the development of fixed and mobile telephone and data networks caused by privatization-related activities.
- Creating communications infrastructure necessary for IT applications, resulting in a dynamic and modern economic system
- Organizing government telecom companies for profitability and entering the stock market
- Providing all scientific, research, industrial and economic centers with access to domestic and international data bases
- Establishing suitable conditions to increase productivity in telecom companies by implementing automation, quality management projects and using new technologies in technical network management.
- Economic development caused by using the frequency spectrum as a communication network infrastructure
- Developing private communication companies by promoting scientific expertise.

Knowledge-based development

- Access of public and scientific and research centers to local and international data bases

- Improving productivity in the telecommunication sector and improving Iran's position in the region and the world via serious concentration on research and using new communications technologies
- Increasing the number of radio channels in a given frequency band, therefore easing communications and information transmission
- Training reliable scientific human resources through intelligent use of past experiences by executing knowledge management projects with emphasis on IT

Active interaction with the global economy

- Improving and updating the process of economic and cultural activities with modern international trade methods and keeping up with regional and global economy through balanced development of the nation's communication networks, specially infrastructure, and developing data and information networks
- Improving domestic and foreign capital absorption conditions
- Establishing the conditions for regional and international communications to transit and export technical services, resulting in enhanced cooperation with regional and global economies.
- Preparing suitable environment for developing foreign investment

Creating a competitive economy

- Laying the basis for removing the government monopoly in telecommunications by passing the necessary laws and regulations
- Making domestic and international telecom bids more competitive by training experts resulting in the growth of internal private telecom companies
- Establishing proper and competitive conditions in information transmission and developing financial and economic electronic transactions

Improving human security and social equality

- Expanding communications to all rural, remote and underprivileged regions of the country and providing various new telecom services using modern technology
- Establishing a new infrastructure for providing communication services including e-learning, e-health and e-commerce
- Providing communications security for air traffic by expanding radio frequencies
- Increasing the society's digital capabilities by executing and expanding modern IT and communications projects

Improving the health and life quality

- Major change in national executive processes and reduction of unnecessary spending from the national economy and therefore noticeable savings in energy consumption, resulting in less air pollution and more environmental protection
- Cost-of-living reduction caused by expanding data networks and fixed and mobile phone services
- Application-oriented researches and using them in society by executing relevant projects

Cultural development

- Increasing activity in all economic and social sectors, especially in the educational, cultural and service sectors and instilling a better atmosphere for women, as half of society's work force, and for the youth's activities in various software and hardware fields all around the country
- Providing educational facilities at universities, schools, educational institutions and centers and also in industrial and economic locations
- Establishing the necessary communications infrastructure for interaction between different cultures and customs

Increasing the effectiveness of interior affairs administration

- Expanding the government's governing role especially in rural and special areas
- Facilitating the general public's political cooperation
- Decreasing bureaucracy and decentralization by using some modern achievements of telecom networks and IT

Possibilities, abilities, limitations

Domestic and foreign possibilities, abilities and limitations of telecommunication are as follows:

Internal possibilities and abilities

- absorption ability of expert human resources required for development of telecommunication networks inside the country
- Development of telecommunication network main structures ,job opportunity for experts and private sector all over the country
- High-tech telecommunication networks and equipment which make optimum using of possible band-width
- Required background in absorption of financial resources for research and study
- Ability of using intelligent systems in telecommunication and IT networks in order to increase the service quality and equipment efficiency
- Using updated technology in radio and wireless systems with wide band for unified services in audio , image and data
- Using copper cable network for protecting the previous investment and upgrading of network capacity by XDSL systems
- Widespread use of optical fiber systems for wide-band services, for instance in multimedia
- Accomplishment of unified networks based on IP, by using of main structure networks

- Competitive environment for communication activities
- Integration of copper cable networks with optical fiber networks for improvement of network reliability ,cost reduction and investment efficiency.
- Using DWDM systems for high capacity expansions in optical fiber cable conjunctions at telecommunication centers in large cities and in main routes of long-distance optical fibers
- VOIP services in network main structures
- Establishment of intelligent networks and new services such as prepaid mobiles and virtual networks
- Wide-band services in mobile communication network by GPRS systems
- Avoiding radio frequency re-use
- Modern equipment with updated technology in communication industry
- New equipment and ready-to-use facilities

External possibilities and abilities

- Increasing demand for communication facilities which results in the fixed telephone, mobile and data networks' continuous improvements.
- Good geographical position of the country ,having neighbourhood with more than 15 countries and the ability to transit the local and international telecommunication
- Increasing demands of electromagnetic waves

Internal limitations

- Lack of required harmony in large scale management level in documentary credit opening, absorption of foreign investment
- Customs authorization and customs clearance

- Delay in collection and approval of laws for privatization of this task
- Rapid technological advances in telecommunication networks and technical structures of networks and the problem of matching with this rapid changes
- Lack of comprehensive city plans and problems of communication requirements planning in urban regions
- Lack of harmony between university education and the professional needs of this sector
- Resistance of executive organizations to frequency regulations

External limitations

- Establishment of governmental tariffs in telecommunication services
- Instability of the required regulations and laws supporting private sector in banking facilities, customs,etc.
- Lack of specific strategy in communication and IT researches
- Disability in investment absorption for researches
- Lack of good management information in research and study
- Low level of salary and welfare of workers in this field in comparison with global average figure, specially in government sector and lack of supportive laws for protecting the experts and professional workers.
- Relative deficiency between production and research development
- Lack of using consultation capacities in frequency section
- Strategy of allocating frequency to final users instead of giving service to them
- Lack of the collaboration between domestic and regional organizations in order to develop their activities in this sector
- Deficiency of regulations supporting exports of material and technical services
- Continuous management changes at decision-making level which is mainly affected by non-technical decisions
- Large number of technical equipment producers in different parts of networks. This non-logical factor causes adjustment costs for integrating the network

- Lack of the expert human resources in undeveloped regions and regulations lack for human resources' absorption
- Traditional methods of management
- Current networks hard to be integrated (PLMN, PSTN, PDN) and lack of intelligent network
- Lack of competitive conditions
- Lack of the required background in order to transfer the government shares in organizations to private sector

Function and position of this sector to approach the vision goals

Long-term first ICT rank all over the region and having effective interaction with international telecommunication companies. In this respect we will consider the following comments:

- Updating the telecommunication with standard quality and good prices in anytime, anywhere
- Development based on private sector presence (private and cooperative) and clarity of regulations and tariffs
- Good regional position for export of technical services
- Effective presence in associations and international groups
- Research management development
- Upgrading professional training in ICT and human resources development
- Establishment of telecommunication exchange in regional and international level
- Having effective telecommunication network with good distribution of communication facilities, proportional to cultural and geographical needs
- Reaching to required main structures of information and telecommunication
- Reaching required infrastructures for an electronic environment
- Reducing digital divide by means of communication highways and development of digital opportunities
- Easy ways for public access to information

GLOBAL AIMS AND MASTER STRATEGIES IN ACHIEVEMENT OF LONG-TERM PROSPECT

Global aims and main strategies of telecommunication sector for development of long-term vision in Iran are as follows:

- To provide urban and rural households with basic standard telecommunication services
- To increase the public access to standard telecommunication services
- Development of standard telecommunication services
- Upgrading telecommunication services
- Improving total efficiency
- Increasing the share of the private sector in telecommunication development
- Increasing the share of government in the provision of telecommunication services
- Increasing the regional collaborations and effective presence in the regional and international unions
- To obtain the first place in telecommunication in the region
- To obtain a better situation for exporting the technical and engineering services
- Correction of sector structure for decreasing of government incumbency and keeping the right of administration, supervision and control for government
- To attract domestic and foreign investments and partnership for developing the sector
- Efficient development of telecommunication networks of the country
- Response to communication needs at all social, cultural and economic sectors
- Human resources development
- Upgrading rules, provisions and standards in this sector

- To Making costumer bases and guarantee the quality of services
- Providing competition ground for development of telecommunication
- Optimization of country's frequency spectrum
- Development of a telecommunication culture in the society
- Making the efficient competition
- Collaboration with regional and international research and scientific centers for procuring and attracting the technology to initiate its indigenous from.
- Paying attention and concentration on research and development in this sector
- Effective use of international conferences and unions for upgrading national position and international aspects

Executive policies of the sector

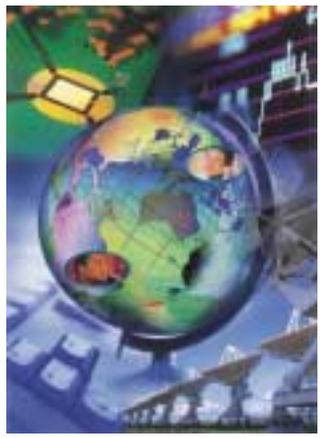
- Designing of general plans of communication networks development by expert consultations
- Transferring all the activities which can be performed by the private sector
- Execution of the country's telecommunication networks development, in the framework of comprehensive and approved plans and avoiding any dispersion in order to ensure quality of ICT services
- To harmonize development of provincial networks with comprehensive plans of integrated development of the country's telecommunication networks, for instance uniform numbering and charging plans
- Decreasing the network technical layers and utilizing the new generation of intelligent networks
- Decreasing the supervision of government especially in the fields that private and cooperative sector are present for services
- Preparing the Provincial Telecommunication Companies, the Mobile Communication Company and Data Communication Company to be accepted in the stock exchange

- Necessity of execution of country's telecommunication network development plans in the framework of comprehensive and approved plans and avoiding any dispersion in order to ensure quality of communication services
- Making the required infrastructures of modern services, for instance electronic government, banking, learning, health,etc.
- Connecting the country's optical fiber networks to the neighbouring countries in order to transit traffic and making regional and international connection and providing communication Hubs in the country
- Increasing the ratio of ICT research budget to the total sector approved credits from 1.1% to 2%
- Paying attention to undeveloped provinces in order to upgrade the level of provinces development and reaching to the minimum of telecommunication index in the undeveloped regions
- Providing the service via automated costumer-based system and issuance of bills with respect to the quality of services at international levels and providing facilities of receiving telecommunication services via communication networks
- Doing researches based on international management mechanism
- Giving license to service providers instead of final users
- Doing research at spectrum domain by universities and consulting organizations instead of research in spectrum management domain
- Consideration of economical aspects in the process of giving frequency license
- Regulation of frequency license in all radio services
- Supervision and control over market in order to guide it to a competitive market
- Regulating good procedures for collaboration of government and private sectors

- Planning and training by new technologies
- Harmony between provinces to use the state communication facilities
- Attention to undeveloped provinces to make them develop rapidly
- Response to all communication demands in the fields of economy , industry ,science, trade and tourism all over the province
- Establishment of at least one physical communication line for all urban families to create a proper way of rapid communication
- Reduction in average waiting time for getting a telephone connection to less than 45 days
- Rapid communication coverage for all urban and rural areas with population of more than 100 families
- Considering the economy of activities and investment (excluding basic services and undeveloped regions)
- Absorption of private sector to invest in telecommunication network development in the provinces
- Making suitable conditions for Provincial Telecommunication Companies to enter the stock exchange
- Establishment of required main structures for giving IT services in the province
- Supporting the university researches and technology parks in the field of ICT
- Considering the economical and financial views in definition and approval of research projects
- Defining tariffs for special services proportional to service type, market demand, and user conditions
- Avoiding from unreasonable increase in equipment providers in telecommunication network

Important and fundamental efforts

- Preparing laws and executive codes for privatization and removing the government monopoly in order to create competitive conditions
- Adjusting tariffs for mutual conjunctions in communication networks between active organizations
- Entrance of the corporations covered by TCI to stock exchange
- Creating an integrated and unified management and homogenous operation of all communication networks
- Updated management of telecommunication network security in national and regional levels
- Regulating suitable laws ,standards and instructions in radio services (in licensing, supervision and using the spectrum)
- Updating the national frequency spectrum table
- Preparing comprehensive laws in national communication
- Planning of tariff structure in communication services
- Execution of unified general and professional systems in telecommunication sector
- Preparing a comprehensive procedure for training
- Preparing a comprehensive procedure for research and study



Quantitative goals

Goal	Unit	From	To
Penetration factor of fixed telephone	%	26	50
Penetration factor of mobile telephone	%	7.85	50
Penetration factor of telephone in urban areas	%	108	177
Penetration factor of telephone in rural family	%	56	104
Communication coverage of rural areas	%	-	90
Telephone link for rural areas with population more than 250 persons	%	-	80
Increase in non-government sector share in total telephone operators	%	-	50
Standard coverage increase in mobile telephone network	%	65	92
Increase in main roads having mobile telephone coverage	kilometer	10000	26000
Increase of ASR factor in mobile telephone network	%	35	55
Supervision development over spectrum	%	11	71
Increase in license for network services of post and telecommunication	%	-	-
Increase in ICT technical articles and reports	number	170	275
Increase in professional training budget in ICT	%	-	1
Export of technical services in ICT	Million Euro	-	100
Increase of ASR factor in telephone network	%	42	55
Increase in non-governmental sector share for total mobile telephone users	%	-	50