

INDIA NEEDS URGENTLY A COMMUNICATION REVOLUTION

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"Free Enterprise was born with man
and shall survive as long as man
survives."

— **A. D. Shroff**

1899-1965

Founder-President

Forum of Free Enterprise

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By
N. T. Taskar

The United Nations has declared 1983 as the World Communication Year. It will be a good opportunity for us to do a little introspection, without making much fuss about the physical expansion of communication services, to look at the Indian scene, assess our progress and shortcomings in the communication field and plan the future. In this context, with our basic objective of removal of rural and urban poverty, Communication Year has a special significance to us in India.

Progress During British Rule

In India we missed the first industrial revolution of the eighteenth century on account of lack of communication with the outside world, internal dissensions and political instability in the country. The British rule forced us to interact with the outside world. British traders started exporting raw materials, mainly for consumption by their

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factories, and importing finished goods. The rulers took up the expansion of roads, railways and telegraph system essentially with a view to helping the administrative machinery and defence of their Indian empire. In 1857, at the time of army mutiny, which has been aptly called the first war of independence, the British were able to improve the striking power of their troops by making effective use of the skeleton telegraph service, as it existed in the northern parts of the country. Before the establishment of transport and communications network, it was extremely difficult to move from one part of the country to another and news travelled at a slow speed. For instance in 1784, when northern parts of India were severely affected by drought conditions and millions perished due to want of food, it was only after a few months that the news of the trail of death and destruction reached people in other parts of India. Such tragedies were a common feature in the life of Indian subcontinent.

After the consolidation of British rule in India, a systematic programme for development of telegraph service, so as to facilitate civil and defence administration, was launched by the Government. The need for quick communication by telegrams was also felt by trade and commerce. Until 1860, cotton grown in the Indian subcontinent was utilised for production of handloom cloth and whatever was surplus was exported to China. When deprived of the American supplies of cotton in 1860's, due to civil war in the United States, British cotton mills switched over to Indian cotton. In the latter half of nineteenth century,

British capital also moved into India to set up a large number of mills for the production of cotton yarn and cloth. All these developments contributed to the growth of communications during 1870's and 1880's. However, the government controlled the exchange rate between the Indian Rupee and British Pound in such a way as to benefit British millowners at the cost of Indian farmers. The impoverishment of the farmers over a long period of British rule left the purchasing power in the hands of a few people. As a result, the economic activity in the country except for trade and commerce was very limited. As the cost of expansion of telecommunication facilities in the countryside was very high and financial returns being low, there was very little expansion of telegraph facilities, beyond those required to meet law and order needs.

The expansion of telephone services was mainly governed by commercial needs. As soon as proposals for introduction of telephone service in big cities were mooted in late 1870's, the Bombay Chamber of Commerce took a lead in organising a delegation of businessmen to wait on the then Viceroy of India. The delegation impressed on the Viceroy that the functioning of the Indian Telegraph Department left much to be desired and the business community would very much appreciate if the responsibility of providing telephone service in big cities was not taken over by the Government. This request was acceded to and as a matter of policy provision and management of telephone service in big cities of Indian subcontinent was left to the private sector. For nearly 60 years, Bombay, Karachi and Madras had very good automatic telephone service whilst

Calcutta continued to have manual service until 1943, when the Government decided to take over the management of these telephone systems. During the decades of 1920's and 1930's, the expansion of telephone services was slow mainly due to economic recession and the fear of takeover by the Government. In Delhi as well as other cities of Indian subcontinent, telephone service was being provided and managed by the Government, when India became independent in 1947. During the closing stages of British rule in India, there was considerable expansion of telecommunication facilities in order to meet defence needs arising out of the second world war. Even though India was far behind western countries in respect of the number of telephones per 1000 of population, when she became independent, technologically the services provided were quite up to the mark as compared to those in European countries. This is an important aspect which we should remember when considering telecommunication expansion in India.

World Telecommunication Scene

After world war II, the discovery of transistors by scientists of Bell Telephone laboratories in 1948, triggered the second industrial revolution brought about by electronics, computers, and communications. As a result of the first industrial revolution, there was a shift of working population from agriculture to industry. This was helped by continuous improvement in productivity of both industry and agriculture, by the advances in science and technology. Due to colonial domination, most of the Asian and African countries except

Japan were not able to reap the benefits of industrial revolution and improve the quality of life of the large mass of population. These countries, with the problems of poverty, malnutrition and population growth are still struggling to usher in the industrial culture. Naturally, it has become extremely difficult for them to take advantage of the communication and electronics revolution. Some indication about the phenomenal growth as well as disparities in the state of telecommunication development can be had from the fact that 80% of world's telephones are in North America and Europe. These countries have the largest share of telephones and other connected facilities like communication links and computers. Since the industrial production of computers in early 1950's, the physical size of the computer for performing the same function has diminished by a factor of 1000. At the same time, costs have dropped by a factor of over 100 or even more. On the other hand, reliability has increased by a factor of 1000. New technology has been developed and is being perfected for voice communication with computers. Electronic mail systems are also being developed so as to have an economically viable alternative to the conventional postal mail service. In 1982, 2.8 million personal computers were sold for 4.9 billion dollars in United States: In short, the developments in the field of computer communications and more particularly the cost reduction, coupled with increased reliability, are unbelievable and fantastic.

The impact of quick, reliable and cheap communication on increased efficiency in the Government and industry has

been tremendous. In fact, the development of information and communication technology has brought about a managerial revolution in Western Europe, Japan and the United States. In almost all important areas of economic activity like banking, financial monitoring of economy, functioning of energy network, the use of computers has become inescapable. As a result of the lead during the first industrial revolution, followed by fantastic progress made during the last 2-3 decades, industrialised nations have increased their dominance over world trade and commerce. The countries of the third world are watching the situation with dismay and do not know how to neutralise the commanding lead taken by western powers in the communication revolution sweeping the globe. The world is becoming smaller and smaller on account of cheap and reliable means of communication. Improvement of living standards of countries in the third world has therefore become a major problem area and it is in this context that telecommunication revolution has become a matter of life and death, almost literally, for a democratic country like India.

Indian Needs

In India, the full significance of the powerful influence that computers and communications can have on the economic development of the country has not been appreciated or understood so far. This is due to the inherent tendency of government departments to look at problems

in isolation. In private industry, coordination and management problems do arise but they are sorted out in course of time due to the predominant consideration of profit motive. All over the world, including economically advanced countries like United States, Japan and Europe, the government is slow moving and conservative. In India, the development of telecommunication facilities have been hampered by the fact that for the last three decades Government has a total and complete monopoly not only in the provision of communication facilities but also for the manufacture of communication equipment. In no advanced country of the world this is so. At this point of time, what is needed in India is the understanding and appreciation of the fact that communication facilities cannot and should not be viewed in isolation but as a necessary infrastructure for a number of activities linked with economic development. Of course, the linkage between trade and commerce and communication facilities is well recognised but it can be said about other important sectors of the economy dependent on good communication facilities.

Banking Industry

Over 2,000 years ago, Arya Chanakya, whilst considering the problems of public administration, categorically indicated the most important guiding principle of statecraft as "Artha Eva Pradhan". What he probably meant was that a political administration should give the topmost priority to financial matters. In India of 1983, when we are sitting on the top as a simmering volcano of public discontent, this advice of Arya

Chanakya can be a beacon light to us. In the modern world of today, effective control of economy is made possible by use of information technology to speed up and control banking operations.

During the next 15-20 years, the Banking industry will probably be the most important and crucial sector of the Indian economy. The problems which are complex in nature are further aggravated by the attitude of banking staff unions towards the use of computers and communications for banking operations. Whatever may be the past and present grievances of banking staff, some introspection by them about their attitudes vis-a-vis national economic interests is absolutely essential at this stage. After going into the intricate and complex banking problems, an eminent bank economist, Dr. K.S. Krishnaswami, said as follows, in September 1981 : "As banking becomes more and more sophisticated, it will become unavoidable for the banking industry to move away from its out-moded technology and get in line with the rest of the world. Everywhere in the world, modern aid for cash operations, data processing and information systems have transformed the industry and greatly enhanced the productivity of labour and capital utilised by it. We are far far behind, and today, there is no comparison between a bank office in Tokyo, Singapore, Bahrain, London or New York and a bank office here. We cannot afford to lose more time in this regard ; and unless our operations, information and control systems are modernised, banking will be a most inefficient and wasteful industry. This transformation

will not be easy. But without it, I am afraid that banking will no longer merit the name of a service sector. This is of course, not a matter that bankers and economists can by themselves settle. But it is a matter that requires urgent action by Government; and it is the joint responsibility of all of us to impress upon the authorities the damage that the country will suffer if this technological progress is hampered."

Fortunately, all the tools for technological modernisation of the banking industry are available and can be provided, if all the parties concerned act in unison. This is what has been made possible by the communication revolution.

Industrial Sector

In all industrialised countries, full advantage has been taken of communication facilities to improve productivity within the industry and for aggressive marketing not only within the country but also overseas. In India, the Government is encouraging dispersal of industries by giving financial incentives to industrialists for setting up industries in backward regions of the state. The state Governments have also set up industrial estates in backward areas. However, even in an industrially advanced state like Maharashtra, very little attention has been paid so far for the provision of communication infrastructure. Recently a study was carried out of the industries located at Nasik, Aurangabad and Roha — nearly 10 years after the industrial estates were set up. The study said: "Communication between Bombay and each of these centres (Nasik,

Aurangabad and Roha), either via telephone or telex, came in for severe criticism whatever may be the position of local communication facilities. A number of companies found it essential to maintain a courier service between their Bombay office and their plant in the growth centre, as the telecommunication link was found to be so unreliable. In the long run, it inevitably affected their flexibility of operation, especially when arranging for supplies of raw materials and transport of finished products. This entailed an avoidable economic cost to the organisation."

Even more revealing than the neglect of Communication facilities for industrial estates in Maharashtra is the sorry state of communication facilities which are provided for Telecommunication factories of Indian Telephone Industries located at Naini and Rae Bareilly in UP with the head office located at Bangalore. Communication by letter from Rae Bareilly and Naini to Bangalore takes about a week and as far as telephone or telex communication is concerned, it is almost non-existent. If the factories, with investments of hundreds of crores of Rupees, functioning under the Ministry of Communication of Government of India, have to operate under such adverse communication environment, one can imagine the plight of so many industries located in backward regions of the country. In this respect, India can learn a lot from France. When it was decided by the French Government in late 1960's to encourage industrialisation of rural areas, one of the foremost things done by the Government was to provide excellent telecommunication facilities in

those areas even though the initial cost was high. In the United States in 1930's, special attention was paid to rural communications and heavy investments were provided for, in the "New Deal" programme. In India, the problem of development of rural communication is more complex because of low purchasing power in rural areas. Today, electronics offers a number of solutions to rural communication problems and one can choose a cost effective solution. The Government has, however, to realise that a lot can be done in the area of rural communications by effective participation of local community as was done in the United States, if a speedy solution is to be found to this complex problem.

The industrial sector can get fantastic returns in terms of improvement in productivity and profitability if reliable communication facilities are made available.

Power Sector

Another important area of the Indian economy, affecting both industrial and agricultural production, is the Power sector. In the first two five year plans, we did fairly well in meeting nearly 90% of the expansion targets for this sector. However, during the later plans, planned targets for expansion of power sector had to be scaled down due to various reasons, including high investment costs. In advanced countries, communications and electronics have played a major role in improving the generation and distribution efficiency of electric power. In India, one of the major handicaps faced by the State Electricity Boards has been

lack of communication facilities for rural areas. Complete monopoly of the manufacture of communication equipment required for the power sector by the Government and rigid control as well as procedural formalities involved in allocation of frequencies has in no small way affected the development of rural communications to control and improve productivity in the distribution of electric power. The financial benefits that can accrue to the power sector by improved communications are so overwhelming and the cost so low, as compared to that of increased power generation, that one is not able to appreciate or understand the obsession of the Government in restricting manufacture of communication equipment to public sector undertakings. For an outsider it is difficult to know how State Electricity Boards have suffered not only due to political interference in their day to day functioning but also by being starved of the supply of technological tools like communication equipment which can be easily manufactured in the country, if restrictions are removed. It is high time that we looked at our power sector problems in totality and not harp on only a few shortcomings which are obvious.

Railway Transport

During the last two years, serious efforts are being made to improve the freight carrying capacity of Indian Railways. Today the Railways are faced with many technological and administrative problems including superfluous staff. However, it must be conceded that lack of communication facilities have to a great extent aggravated problems

of Railway administration in India. For nearly 100 years, since their inception, the Railways depended on Indian P&T to provide them with communication facilities. In late 1950's, when Railways decided to go in a big way for electrification, communication facilities were provided by Indian P&T on the same lines as was done in the past. On account of the fear of accidents due to human errors, the Railways did not opt for a centralised traffic control equipment, using sophisticated communication equipment. Use of such equipment may have increased the freight handling capacity of the electrified sector by nearly 50% but perhaps this was not done due to conservative outlook and reluctance to take the risk of using modern technology. In late 1960's, realising the importance of communications and the inability of P&T to meet their requirements, Railways pressed for their own Microwave communication network. This demand was conceded by the Government but the building of the network was hampered by inability of public sector undertakings to supply the equipment. Whilst imports of communication equipment were restricted for the Railways, the P&T Department went ahead with large-scale imports of Microwave equipment on the plea that such imports were inescapable for expanding subscriber trunk dialling services. As far as communication facilities are concerned, the Railways are still not out of the woods and it is not likely that the situation will improve in course of time. The demand for communication equipment for other than public telephone network is going up by leaps and bounds but so far the Government policy has been so

short-sighted, that it appears Railway transport will have to do with insufficient communication facilities, unless there is some realistic thinking on removing the constraints on manufacture.

Law and Order

As time moves on, the people are becoming more conscious of their rights and are prepared to fight for them. Communications have been in a way responsible for this awakening amongst people. In many states, this awakening has resulted in increasing social tensions and violence. Law and order has, therefore, become a major problem for the administration in India. Here again, modern communication systems and methods can be used effectively in controlling social upheavals, with the minimum amount of police force. In this area also, the potential requirements of communication equipment are high. The Government, in its own interests, should try to get this equipment at reasonable cost by encouraging both the public and private sector industries to cater to the needs, as is being done in all advanced countries. Considerations of security, which may have some relevance 30 years ago, when industrial policy for communication equipment was formulated, should not come in the way of overwhelming national interests of Indian economy. In any case, since modern communication equipment, which is freely available abroad, is being used in India by smugglers and other anti-social elements there is no reason why such equipment should be denied in adequate quantities to law and order enforcement agencies

either on account of high prices or non-availability. Some solution has, therefore, to be found to the problem of high cost and non-availability of modern communication equipment.

Indian Communication Scene

Against the above background of national needs, the Indian communication scene presents a very depressing picture though, since Independence, there has been a phenomenal expansion of telecommunication services in India, as will be evident from the following statistical information.

- (i) The number of telephone exchanges have increased from about 300 to nearly 8,000. The number of telephones have gone up from 1 lakh to nearly 30 lakhs.
- (ii) Long distance circuits have gone up from about 1,500 to over 70,000.
- (iii) Number of telegraph circuits have gone up from 450 to over 20,000.
- (iv) Teleprinters in service have gone up from about 600 to over 40,000

During the last 30 years, there has been a quantitative growth in communication facilities. However, in spite of this spectacular growth, the communication services

particularly in quantity and reliability are totally poor and inadequate to meet the growing needs of not only trade, commerce and industry but also of Government administration. In this U.N. Year of Communication, it would pay us big dividends, if the Government, industry and ordinary telephone users do a little introspection as to the rootcauses of poor communication services in India. In this context, it will be of interest to have a close look at some of the happenings in the communication field, about which very little is known to the public at large.

In the field of Telecommunications, Indian P&T administration showed a lot of foresight and dynamism when facilities for manufacture of telecommunication equipment were set up in 1951. It was decided to do so in a public sector organisation. In retrospect and hindsight, one can say that this decision, even though it may have been appropriate at that stage, has in course of time adversely affected the growth of communications in the country. Setting up of Indian Telephone Industries at Bangalore was followed by inclusion of communications industry as a reserved area of public sector in the Industrial Policy Resolution of 1956. In 1956, P&T administration took the commendable step of setting up a Telecommunication Research Centre at Delhi. After this flying start in the field of communications, P&T administration became impervious to any constructive criticism and started zealously guarding its monopoly of providing communication facilities and restricting manufacture of communication equipment

to the Indian Telephone Industries, in which almost all senior management positions were monopolised by P&T officers. Subsequent events in respect of technology choices and reluctance of P&T administration to change its structure, with separation of Postal and Telecommunication Services, during the last 20 years show how strong and powerful this monopoly in communications has become with the passage of time. In the United States, Bell Telephone Systems is providing cheap, efficient and reliable telephone service and until recently had a monopoly of providing national and international trunk circuits for communications. In spite of the efficient services provided by Bell System, U.S. administration has taken the right step in breaking the monopoly so as to stimulate the growth of communications. In India, we are faced with a much more formidable task of breaking the monopoly because it is held by the Government itself. Unless there is strong and organised public opinion which is aware of the mess that the communication industry is in, due to wrong technology choices and delays in decision making, the pace of telecommunication revolution will be slow. What is causing concern to knowledgeable persons is that the slow pace of improvement in communication services will not only adversely affect the growth of Indian economy but will give rise to conditions very favourable to a violent upheaval. The Indian communication scene, which is really alarming, considering the technological manpower and capabilities we have, needs some urgent attention of all those who are interested in a transformation to an egalitarian society by peaceful evolution.

Recommendations

India has changed substantially due to spectacular advances in science and technology during the last 30 years. However, on account of population increase and uneven distribution of wealth, economic improvements have given rise to social tensions and rise in expectation of a large mass of population. The crucial question is "Where do we go from here?" The rural areas as well as industrial population in big cities is simmering with discontent against the elite classes. We are all sitting on the top of a volcano, which may erupt at any time, if we do not act with speed and dynamism in removing major obstacles in the growth of our economy. Fortunately, scientific tools like computers and communications for improving productivity in the industry and Government are readily available. So far, by and large, the Government, industry, the people are either ignorant or complacent about the role that efficient, reliable and quick communications can play in gearing up the economy. It is becoming difficult day by day to export finished goods due to competition from highly industrialised or better organised countries. The Indian industry will come under tremendous pressure during the next two decades on account of diversion of funds to rural areas for amelioration of poverty and shrinking local markets due to lack of purchasing power. The political and economic situation will force the country to go in for massive investments in agriculture, so as to avoid generation of social tensions and violent upheavals. With this background, communication revolution has a special significance for the Indian industry and economic

planners in the country. What the country needs in the communication field is basic changes in the hitherto followed monopolistic policy for the communication industry and an awareness that reliable and efficient communication can be provided only by an independent and dynamic telecommunication corporation and not by the Department of Government. Some of the technological decisions like production of 60 year old vintage Strowger equipment in 1973, 30 year old vintage Crossbar equipment, with an investment of over Rs. 60 crores in 1980, location of electronic exchange production at Gonda (U.P.) in 1982, clearly show, if any proof was needed, that India can no longer afford to follow such policies, which in their long-term effects are economically disastrous for the communications industry. For all these decisions the people and the industry have to share the blame on account of their complacent attitude to an important area of telecommunications.

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“People must come to accept private enterprise not as a necessary evil, but as an affirmative good.”

— **Eugene Black**

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Published by M. R. PAI for the Forum of Free Enterprise, "Piramal Mansion", 235 Dr. Dadabhai Naoroji Road, Bombay-1, and printed by U.K. Goshalia at Ruby Printers, 30-D, Cowasji Patel Street, Fort, Bombay-400 023.