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NCST Panel on Futurology:
Technical Sub-Group on Communications
Recommendations to PLANNING COMMISSION
Regional Radio Service: An Instrument for Rural Development

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1. **Summary**

We propose the creation of the **Regional Radio Service** as a new step in the application of Communications technology to the development drive. The Regional Radio Service is an 'appropriate technology' solution to the problem of **Rural Broadcasting**, to complement the much larger allocations now being made to Rural Development. The Technology and the Organisation structure for the new approach have been specified. An economic analysis establishes absolutely the viability of the proposed scheme without recourse to 'commercial broadcasting'.

2. **Introduction**

Both Central and State governments initiate a number of development projects which are formulated region-wise and, sector-wise (agriculture, education etc.). For the successful implementation of these projects, mass-media communication with the people is indispensable. In largely illiterate rural areas, sound broadcasting or TV must be used. The objectives of the Communication function in a development project are

- a) to generate awareness of what is being planned
- b) to create enthusiasm and support for the projects among those affected
- c) to communicate the factual information needed by the people in relation to projects of agricultural extension, marketing, farm management, agro industries, etc.
- d) to ensure informed participation of the people.

3. **Radio and TV Broadcasting:**

A considerable part of the Mass-media function is being performed by the radio in our country. But the broadcasts, at present, are beamed at large statewide or linguistic audiences and therefore they have to be broad in their content and message. From the point of view of the manager of a development programme, broad-based general broadcasts are sub-optimal because each aspect of the programme needs to communicate continuously its own geographically - specific message - pertaining to a specific geographic

region and talking of particular things to create any impact at all.

3.1 Research done on the effects of the **Satellite Instructional Television Experiment (SITE)** show that the SITE programmes have increased the 'awareness' of village audiences, which then require local follow-up to reach the stage of 'acceptance' and 'action'. The latest variations on SITE involve very expensive 'preview' TV transmissions for discussion leaders followed by preview radio forums over the State-wide radio network. The TV transmission to village clusters and the actual radio forum are broadcast and, in turn, followed by discussions at the village level led by the trainees. An easier method of communication than this down to the village level is obviously required.

4. The New Approach – Regional Radio Service

We suggest the use of broadcasts which are very specifically focused, region-wise and development sector-wise, as communication support for development programmes. RRS will be based on intermediate-scale transmitters dispersed district-wise.

4.1 Take two contiguous districts - A and B. At any point in time District A may have projects going on in **Health, Education and Dry-land farming extension services**. Meanwhile, in District B the focus may be on **Family Planning and on-lift Irrigation schemes**. An ad-hoc need for a totally different kind of communication could arise if District B is threatened by an epidemic. Providing the media support for these programmes through a single State-wide radio transmission for an hour each morning and evening is clearly not good enough, considering the present size of the development programmes.

4.2 District A and District B could also be poles apart in terms of their socio-economic and geographic characteristics. District B could be partly urbanised, quite literate and already developed to a large extent because of good rail, road or river communications. In contrast, District A might be a rain shadow area with a different dialect and substantially different, largely illiterate cultural and social framework.

4.3 This clearly indicates the need for totally different approaches in radio communication for 'different' districts. We need independent broadcasting services which cater to the specific developmental communication needs of each district.

5. Technology:

The technologies for providing specific radio communication in different regions could be

- a) Mobile vehicle mounted transmission units
- b) Transmission units packaged and mounted on skids, with a modular antenna. Such a unit could be unloaded and erected in a few days into temporary or semi permanent accommodation. When the monsoon breaks or when a new site is decided upon, the whole equipment could be removed at small cost.
- c) A 3KW station at the district headquarters.

(Note: The transmission units should be based upon **Frequency Modulation** -'FM' which has already been evaluated and recommended for use in India by the Information and Planning Group of the Electronics Commission (see IPAG Technical Analysis Report-56). FM has certain technical features which make it suitable for the application suggested here. These are: **line of sight range** covering a compact area, **extremely good clarity** at low signal levels within that range, **lower input power** than AM radio for the same range, and **ability to over-ride interference**, enabling the setting up of **more stations in a given region**. A further advantage is that FM sets cannot receive distant transmissions under any circumstances, and therefore provide a closed communications system. FM receivers,

therefore, can be exempted from license fees, in our judgment.)

5.1 These alternatives individually or in combination, could be used to provide a Regional Radio Service with its primary focus on development projects.

5.2 Any of the alternatives above could be combined with another intermediate technology solution - Jeep-mounted or portable "studio" equipment. - with which, for example, farmers and others could be interviewed, the tapes edited, and made ready for broadcast.

6. Difficulties

a) Control: The question arises as to how the **Regional Radio Service** would be administered. We suggest that the **Central Ministry of Information and Broadcasting** should own and operate all the Regional Radio Service transmitters, working from a headquarters cell in each State capital. The Ministry would provide the Station managers and the technical staff for each RRS unit from its own cadres. The **State government would supply the programming staff for each RRS unit**, seconded from the **State Departments of Agriculture, Education, Social Welfare, Health**, etc. depending upon which is the predominant problem in the area covered by that particular RRS. Detailed programming would be coordinated by the Station Manager in consultation with the District Development Officer (or the Project Officer in a project area). Control over the RRS would at all times lie with the I & B Ministry through its Station Manager. Important national programmes would, of course, be relayed by the RRS. Most of its transmission time would be devoted to developmental communications, meeting local educational needs and providing mass media support to local development projects.

b) Technical Maintenance: I & B Ministry would supply a technical team with each RRS 'transmission package unit'. A repair lab could be located in each state capital. The units can be pulled out of active service during adverse weather condition, or during the period when the intensity of development activities is low, and given a through overhaul.

c) Power: Mobile generating units of good quality are indigenously available. With the rapid progress of the rural electrification programme, electric power for the transmitter may not remain a problem for long.

d) Availability: Bharat Electronics Ltd., Bangalore, already manufactured compact, packaged-unit, 5KW FM transmitters at a cost of Rs. 4 lakhs. FM receivers are already being made in India (for export) and the technology is well known. IC circuits mean that sets are pocket sized, therefore highly portable. Consequently programming in an agricultural area can be done as well as morning and evening.

7. Advantages

a) Well-defined Focus: Development problems can be addressed directly and one can be sure that they will be correctly understood by the audience which is a compact and relatively homogeneous group. A broadcast focussed on a region, talking e.g. of the scarcity of drinking water in named locations and the possible locally specific solution, will be recognisable by the audience as relevant to their situation. Individual villages and villagers can be identified when useful.

b) High Credibility: The portable/mobile recording equipment makes it possible to interview *individuals*, in situations when they feel at home and where they can talk about their problems and possible solutions in the *local idiom* and in graphic detail. Also the audience can identify themselves with the interviewers. For example, a farmer could be interviewed on his field, where he could give a good description of, say, the kind of pest that attacked his crop and how he combated the menace. When this talk is broadcast on RRS the audience possibly know who is talking. Some of them have certainly seen the man as well as his field, and they have very likely faced the same kind of pest.

These factors enhance the credibility of the message broadcast over the RRS.

c) Matching the local culture: Since the programmes are designed and broadcast for a compact region, the local cultural background and the preferences of the local audience can be positively matched in the broadcasts.

d) Traditional Touch: People can be made to feel involved and morale can be boosted by giving coverage to local events (e.g. religious festivals) and by making full use of the local idiom in music, family customs, folklore, etc.

e) Feedback: Feedback from the audience can be made more meaningful by instituting a Listeners' Forum in the RRS whereby people write to the programmes and experts featured by the station (on prepaid postcards?) or they can even drop in, and get replies specifically addressed to them on the radio. This is simply not possible in a state-wide broadcasting system.

f) Potential for omni-presence: The villager can keep the radio on his cart (or even in his pocket). He can carry it while working and can be given step-by-step instructions for, say, identifying a plant disease, or weeding a new HYV strain. Once the RRS becomes available, many special programmes for such "on-line" applications could be designed.

g) Repercussions (and Indirect Benefits): RRS will have a large impact on the Indian economy by creating an entirely new and enormous market for intermediate technology electronics. At present, sales of AM radios have been stagnant for the last two years, and production has fallen by 50%, even though (a) rural purchasing power is up and (b) hardly 2% of rural families have a radio.

8. Economic analysis:

8.1 Transmitter Costs: IPAG Report-56 identifies the cost of a 3KW transmitter with a coverage of about 100 Kms. radius (approx. 31,400 Sq.Km.) as Rs 4 lakhs. A 3KW transmitter would probably be adequate to cover a complete Revenue District and an even less expensive 1 KW transmitter could serve Talukas or smaller districts.

Allowing for the cost of a generator, Trailer and the necessary minimum studio facilities, and for paying all the technical and program-staff, Rs 1,000,000 would cover setting up and running costs for one year and Rs. 2 million would cover setting up and running costs for 5 years.

8.2 Receiver Costs: The seine report states that the radio manufacturers can today market FM-radio sets for Rs 200-250. If RRS is taken up as a national program it is believed that an organisation like Central Electronics Ltd. could indigenously mass produce the ICs for an FM set which could then be assembled as a small-industry throughout the country and sold for Rs 150/-.

8.3 Market Potential: A district of 1,000,000 population (about 200,000 families should, over three years, be a market for 20,000 sets, even in 'backward' areas. According to the IPAG report, urban family radio ownership is close to 100% already, and wherever desirable programs (Vividh Bharati) are broadcast, even rural areas show high penetration. It is therefore reasonable to expect that when programs of local interest are broadcast from a clear local station, there will be a strong demand for receivers.

8.4 Comparative Magnitude of Investment: Let us take a typical development programme namely Economic Development of **Bijapur District** under Drought Prone Areas Programme, to illustrate the comparatively small outlay required for implementing the RRS.

8.4.1 Bijapur District has a total area of 17,000 Sq.Kms. and a population of 20 lakhs. The whole district is under the purview of the DPAP development programme. The total 5 year outlay for the project is Rs. 24 crores, of which Rs 12.5 crores is Institutional loans and Rs. 11.5 crores is Government spending.

8.4.2 The cost of an RRS Service for Bijapur District over the same five-year period would be Rs. 20 lakhs (see 8.1 above). This is less than 2% of the proposed government spending on DPAP in the

same period. Assuming 20,000 sets are sold, this requires the public to spend Rs. 30 lakhs, which is approximately 1.25% of the DPAP funds being pumped into the region in the same period. Therefore we see that even the DPAP program alone could justify the capital and running cost of an RRS station, while the public investment on receivers would be only a very small fraction of the new funds being spent in the area. We have not gone into the possibilities of a radio-assembly industry for the district, though that is obviously there too.

9. **Conclusion:**

The Regional Radio Service is a technically and economically viable innovation. It will involve no dilution of the Central control over the air-waves. Indeed, by adopting FM transmission for RRS, this control is strengthened in rural areas.

However, because it involves 'appropriate' rather than the latest technology, and because it involves new organisational arrangements, the RRS is likely to be resisted. The full support of the Planning Commission, based on an impact analysis of the RRS, is needed in the light of the New Economic Program stressing Rural Development and compensatory services and programmes in backward areas.

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