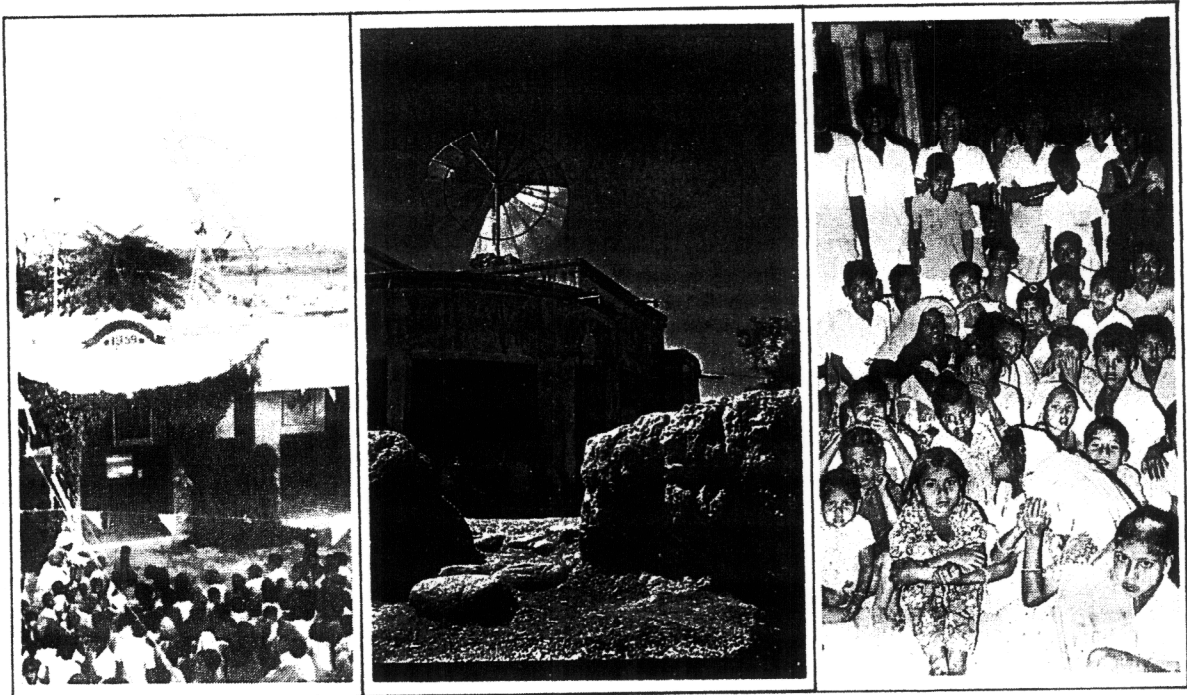


# Lessons from the Indian satellite experiment



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The Indian Satellite Instructional TV Experiment (SITE), conducted during 1975-76, was probably the largest communications experiment of modern times. For the first time ever, a satellite transmitted programmes directly to TV sets in remote villages, and with great success. Four hours of locally made programming were transmitted daily: on agriculture,

health, family planning, nutrition and education. Why was this pilot project undertaken? What were its impacts on the village system? Most importantly, what are the lessons for development communication planners?

### Aims

Pilot project SITE was undertaken to help shape a development support national TV system for India that would be equally available both to urban dwellers and rural viewers. The programmes were to provide non-formal education in agriculture and health to village communities; formal education for primary school children and teachers; and, by promoting Indian culture, to create a sense of political unity and belonging among the nation's disparate linguistic groups. So the aim was to find out how to design a TV system for both economic and political ends.

The space agency hoped that SITE would provide

general guidelines on programme content, TV forms, organizational structures, hardware, costs and project management systems for rural development. Their objective was not to achieve some hypothetical state of 'development' after villagers had been exposed to TV for a year. But the experiment was conceived in an era of optimism about the power of the mass media, and Indian advocates of TV use did not stop to ask if it was reasonable to expect the medium to shoulder such onerous responsibilities alone as if it were a magic wand. No one wondered whether such measures as the improvement of teaching methods could ever lead to changes in the unequal distribution of wealth, power and privilege, which is at the root of the development problem. Unwittingly, the glamorous media may have helped distract attention from the need for more basic economic changes in the opportunities available for the have-nots.

### Organization

SITE was a totally indigenous collaborative project conducted by several ministries of the Government of India. Production of TV programmes was primarily undertaken by All India Radio in the Ministry of Information and Broadcasting. Programmes were videotaped for six SITE states in four languages at specially set up SITE studios in Delhi, Cuttack and Hyderabad. Lists of topics for programmes were specified by the respective ministries; ie, the Agriculture Ministry specified the agriculture topics, the

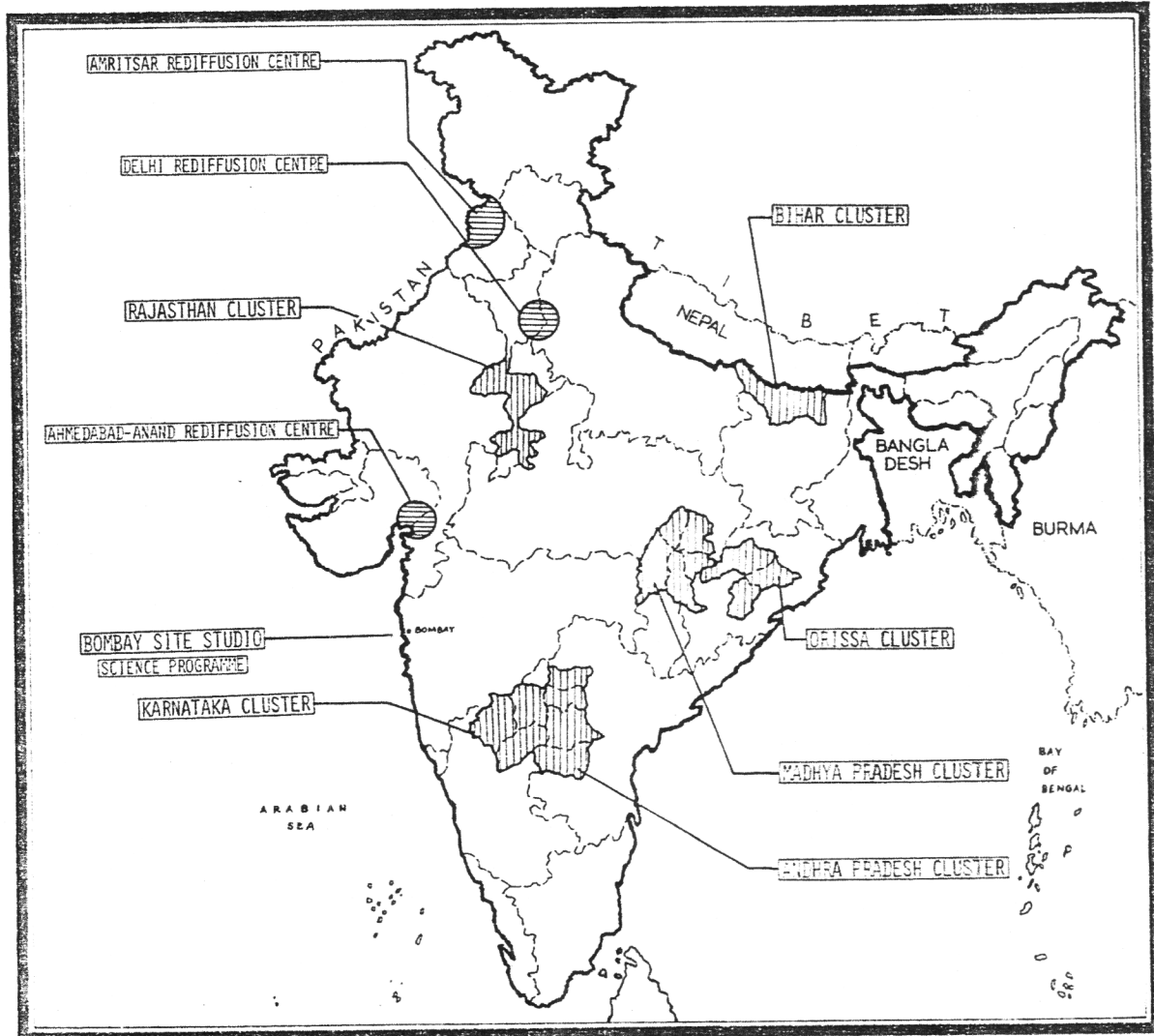
Education Ministry specified the topics for the primary school broadcasts, and so on.

The satellite was NASA responsibility. ISRO handled all hardware ground systems for transmission and reception. ISRO was also responsible for village TV receiver design, deployment and maintenance. Each SITE state government was responsible for electrifying the building which housed the TV set, paying the electricity bills, and appointing a paid caretaker to switch the TV set on and lock it up at the end of the day.

General co-ordination of all agencies in India and contacts with NASA was the responsibility of ISRO. A SITE Management Office was set up to perform this function, staffed by systems analysts trained in CPM and PERT. Detailed milestone charts were submitted to this office by each project unit for nightly monitoring, and support in the case of slippages. Day-to-day co-ordination of specific operations across ministries was handled by setting up groups of working-level people rather than high-level committees—the high-level SITE inter-ministerial Committee of the Secretaries of each involved ministry got bogged down by petty bureaucratic concerns and rarely met constructively after the first few meetings.

### Programming

With the intention of reducing programming costs, an attempt was made to dub two sound tracks on to a



single programme meant for paired neighbouring states that spoke different languages, viz., Andhra Pradesh and Karnataka in South India (see map).

Four hours of programmes were transmitted daily during the SITE year. A typical weekday consisted of 22½ minutes of morning school programmes: one utility item, one entertainment item, and one information item, according to the producers. On two mornings a week, science education capsules especially prepared by the space agency's experimental software group were transmitted. Evening transmission time of 2½ hours was divided into four slots and was shared between three separate regional language broadcasts. The fourth time slot was for the national programme that would reach all the satellite-direct reception states (vertically shaded on the map) and re-diffusion areas like Delhi, Amritsar and the villages of Kheda in Gujarat (horizontally shaded).

### Viewing situation

Six backward states within range of the satellite beam were selected for direct reception. (Vertical shading on the map). Within these states, those districts were selected that had a good chance of continuity of TV service by ground transmitters after the ATS-6 satellite's one year was up for India, so the villagers would not feel deprived after the experiment. In the selected districts, small towns with electricity, petrol pumps and a large number of electrified villages around them were chosen as maintenance centres, each one looking after 100 sets distributed over an area of 40 kilometres round about. Special TV sets were given to villages not larger than 3000 in population, with a safe public building for the TV set, approachable by jeep throughout the year, and within 40 kms. of the maintenance centre. 150 battery-operated sets were installed in one state, to experiment with a different means of reception. They were found to have fewer breakdowns because they were not victim to the power fluctuations that affected the mains-operated sets. A total of 2,336 special receivers was installed, the majority in village schools. Each one was entrusted to a school teacher who was paid to switch it on and off.

In the first month of SITE (August 1975) only 70 per cent of sets were operational because of unexpectedly violent monsoon winds and floods that cut off approach roads. However, the situation improved rapidly and by the fourth month 94 per cent of sets were in operation. This figure subsequently stabilized at around 90 per cent, which is higher than in the metropolitan cities of India.

### Social evaluation plan

Social scientists were hired by the Indian space agency to conduct a summative evaluation of the project, in accordance with a clause in the Memorandum of Understanding that they signed with NASA in 1969. Two of us (an anthropologist and myself) were recruited less than two years before transmissions started; our group grew in size to include 150 other social researchers. It was too late to contribute to the design of the Experiment, and our efforts had only a peripheral impact on programme design\*. The SITE

\*There was one notable exception in the case of 33 hours of science programmes made by a tiny experimental science-education TV studio to which the Indian space agency had assigned 1 full-time child development researcher with experience in formative research.

social evaluation plan that we evolved had the following phases:

#### Phase One (pre-SITE)

Context evaluation: Audience profiles; Needs assessments (Dec 73-Dec 74).

#### Phase Two (pre-SITE)

Input evaluation: Pre-testing of prototype programmes (Dec 73-June 75).

#### Phase Three (During SITE)

Progress evaluation: Programme feedback from the audience; in-depth studies of specific programmes (August 1975-August 1976).

#### Phase Four (Before-During-After Studies)

Global evaluation: Sample surveys of adults; experimental studies of children; participant-observation ('holistic') studies; content analysis; in-depth studies of single processes (Jan 75-Sep 77).

### Some major village impacts

After early curiosity wore off, the first month's average evening audience size of 300 settled down to a figure of about 100 per set - still amazingly high. This audience was composed of about 30 per cent children, 50 per cent adult males and 20 per cent adult females.

Socio-economic status was found to be inversely related to TV viewing. The small farmers and landless labourers formed the greater part of audience. After the novelty wore off, the large farmers attended only on days when they expected drama or other entertainment; they missed escapist Hindi films on SITE which they could afford to see in the nearby town; they already knew much of the instructional content through their other sources of information; they did not relish sitting beside their 'daily labour', evening after evening.

Twice as many men as women reported viewing. The number of women who reported frequent viewing dwindled owing to the clash of viewing times with cooking times, and the general irrelevance of programme topics to their areas of interest.

TV viewing did not displace or increase use of other media, but it did increase contact with the village-level extension agent.

The need for more than one community receiver was felt in larger villages.

The unusual and special publicity in all media for development schemes generated under the Emergency declared by then Prime Minister Indira Gandhi, simultaneously with SITE, made it difficult to assess the impact of SITE programmes. Levels of social improvement were high in TV and non-TV villages after a year.

There were statistically significant gains in knowledge of preventive health measures.

There was an increase in the proportion of respondents of both sexes who were favourable to the ideal of a small family.

There was a large gain in knowledge of improved varieties of animal breeds, but there was no gain in general agricultural knowledge partly because farming techniques vary from region to region.

There was significant gain in knowledge of political events, in both TV and non-TV villages, amongst both men and women.

In general, the magnitude of the gain was greater for lower castes, for illiterates, for females, for low income groups and for those who reported regu-

lar TV viewing. These were groups who had less exposure to other sources of information and thus gravitated towards free community-TV.

Children exposed to TV in the classroom showed significant increases in their language development.

The presence of TV in the school had no impact on enrolment or absenteeism figures. In countries such as India, these problems have roots in the economics of living conditions and the need for little children to be tending the infants or to be working in the fields themselves.

TV instigated a search for new sources of knowledge among the children, judging by the increased use of libraries in TV as against non-TV schools.

TV school teachers were excited about TV as a classroom aid. They saw the 'enrichment' programming as unrelated to their syllabus: it was hence not threatening.

### SITE costs

It is worth stressing the imbalance between expenditure on software and on hardware in the SITE project. *The total effort involved 3300 person years, of which 2050 were spent on hardware, and only 850 on software.* Hardware planning started in 1970 while software planning started only in 1974.

*82 per cent of SITE costs were incurred on hardware—earth stations, studios, TV sets and so on. Only 9 per cent of total costs were spent on actual software production, and 3 per cent on social research and evaluation.* The cost of the space agency's managing and co-ordinating the project was 6 per cent.

### Lessons from SITE

SITE was conceived in the mid-1960s when mass media were considered powerful agents of development, and satellites were becoming available to carry the development message to otherwise unreachable areas. It was initiated by the Indian space agency as a one-year pilot project, an opportunity to learn how to shape and manage a national development TV system in Indian conditions. Since it was not designed to bring about any magical changes in knowledge, attitude or behaviour in only one year, the social impacts of village TV are primarily of academic interest. The more crucial items are the do's and don'ts that can be culled from the SITE experience for the design of development TV systems in comparable countries. Some lessons are listed below:

1. Those in development communication should be trained to understand technology alternatives and to evaluate them circumspectly in the light of human needs, so they can make judicious decisions on which to adopt. *The nature of SITE's origins show how those in development education, agriculture, health and formal schooling resisted the satellite proposal strongly, even though it could help to extend their services to remote areas that they could not otherwise reach.*

2. Development agencies that are supposed to build and create new institutions, structures and capacities cannot be run in accordance with the same rules and the same spirit that run orthodox government departments. The Indian space agency was designed as an R and D group to encourage innovation, and had an organizational climate that was quite distinct from the slow bureaucracies of the agriculture, health and education ministries.

3. Development planning, and hence develop-

ment communication planning, happens in a political context. All assumptions should be explicitly acknowledged, and all political contingencies foreseen. SITE programming produced by the Ministry of Information and Broadcasting of the Government of India was greatly affected by the sudden declaration of the state of Emergency which meant total censorship of all media, a month before SITE started.

4. If communication technology is to be deployed for development support, attention should be paid to linking expected positive results of media use, such as improvements in teaching and availability of information, with more basic changes in the opportunity structure so the have-nots will have the resources to use information. Without these simultaneous efforts and linkages, it would be dishonest and naive to claim that communication technology can be harnessed for development ends.

5. The need to use professional managers and modern management techniques in the tasks of development cannot be stressed enough. Systems analysts in SITE used CPM and PERT to make the project the unusual operational success that it was.

6. More specific analysis of the form and roots of underdevelopment is required by media advocates in each country, so appropriate development programming may be designed rather than mechanically apportioned between the different government bureaucracies responsible for development tasks, eg, health, agriculture.

7. *In project after project, the media hardware has worked well while the software has been neglected.* History repeated itself in SITE too: while development work on SITE hardware started in 1970, software activity started in 1974 only; while 82% of SITE costs were incurred on hardware, only 9% was spent on software. Full-time formative researchers should have been working with content experts from 1970 too, to develop software specifications and prototypes as the engineers were doing for the hardware delivery system. It is a major miracle that there were four hours of programmes ready for transmission every day in SITE, when equipment often arrived late and staff were recruited at the eleventh hour.

8. Social researchers have to guard against doing the kinds of action-research that they know how to do, rather than the kinds of research that the situation demands. The very elaborate context-input-process-product evaluation model was used in SITE. Pre-SITE audience profiles, needs assessments and programme tests were attempted, feedback on audience responses during SITE were obtained, and impact studies were conducted after SITE. Given the learning-experience focus of SITE, it might have been more instructive to have had non-participant observers posted in the different agencies involved in SITE as well as in the villages, and also to have ensured that the project participants carefully and regularly listed their experiences for the benefit of future projects.

9. Free community TV via satellite reached those who were otherwise out of reach, such as women, illiterates and low-income groups. There were statistically significant gains in their health knowledge, family planning attitudes, political information level, and overall social development. It can be conservatively claimed that free community TV housed in a genuinely public building, to which all castes and classes have access, can level inequalities in the distribution of relevant information to villages.