From Demonstration to Destiny: SITE at 50 — A Contemporary Reflection from Within

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Abstract
The Satellite Instructional Television Experiment (SITE) (1975–1976) is widely recognised as a milestone in the application of satellite communication to education and rural development in India. Fifty years on, SITE still warrants careful re-examination — not just as a technological achievement, but also as an institutional experiment in governance, collaboration, and policy learning. Written from the perspective of a primary researcher who worked during SITE's operational period (Bangalore University, 1975–76), this article revisits the experiment's origins, design, programming architecture, research and evaluation practices, and the institutional dynamics that shaped what SITE could accomplish within one year. It also explores how SITE's lessons were interpreted, sometimes selectively, during the transition to INSAT, and why equity-focused design elements such as community viewing and local relevance proved difficult to sustain under operational and commercial pressures. The core argument is that SITE's legacy lies less in demonstrating that satellite television can reach villages than in clarifying the conditions under which communication technologies can serve development and education goals over time: stable institutional incentives, participatory governance, reliable maintenance systems, and evidence-informed policy decisions.

Keywords: SITE; INSAT; educational television; rural development; institutional analysis; technology transfer; India

On a personal note:

The author's extensive involvement with the Satellite Instructional Television Experiment (SITE) provides a significant context for this article, not only as a historical memory but also as an intellectual journey shaped by early encounters with India's most ambitious communication initiative. Entering the field as a young postgraduate student, he was educated within a strict academic environment that emphasised thorough engagement with foundational communication texts before any practical experience. However, his initial fieldwork in the villages of Gulbarga highlighted the gap between theoretical assumptions and practical reality. Equipment failures, intermittent transmission, and uncertainties around custodianship exposed the complexities of turning development communication ideals into practice.

A pivotal moment happened when his mentor, Eapen, encouraged him to look beyond assessing the "success" or "failure" of televised content. Instead, he was advised to explore the broader socio-institutional ecosystem in which SITE was embedded. This change in viewpoint later influenced his doctoral research at Simon Fraser University, where he adopted a political economy of technology approach. Rather than viewing SITE as a straightforward development experiment, he investigated its connection with geopolitical negotiations, national institutional priorities, and the political context of the Emergency—factors that would otherwise remain hidden in a purely programme-based evaluation.

This long arc of engagement continues to shape the author's reflections. He considers SITE not only a milestone in India's broadcasting history but also a reminder that technological promises must be understood within social, political, and institutional contexts. At a time when crises like the COVID-19 pandemic have renewed state interest in television-based outreach, his reflections highlight the cyclical nature of media paradigms and the ongoing necessity for grounded, contextually aware scholarship. The note thus presents SITE as both a historic moment and a fragmented intellectual reference point.

Introduction: Why SITE still matters

SITE is often celebrated as a bold step: a satellite in orbit, signals reaching villages, and educational television deployed on a scale that would have been difficult with terrestrial infrastructure alone. This celebratory framing is understandable. In the mid-1970s, India's rural communication environment was characterised by infrastructural scarcity, high illiteracy, and limited reach of print media. The promise of satellite television was appealing: a single space-borne platform could bypass bottlenecks of coaxial and microwave relay networks and extend educational content to rural communities that were otherwise hard to reach. (Sarabhai 1969). However, when a project becomes iconic, the temptation is to reduce complexity into a straightforward success story. The danger is that the most valuable lessons—such as how institutions behaved, what constraints appeared, and why certain objectives were easier to demonstrate than to maintain—are overlooked. A 50-year retrospective asks different questions from those posed during SITE's operational phase. Instead of solely questioning whether television messages were received and understood, we can ask: What did SITE reveal about governance and incentives? Which aspects of SITE stemmed from its experimental nature rather than a durable policy commitment? How did conflicting institutional priorities influence the transition from demonstration to operational systems? And what does SITE teach us today, as new "leapfrogging" narratives emerge?(Lerner 1972) Are narratives surrounding digital platforms, satellite broadband, and AI-enabled education similar?

Classic communication-for-development (C4D) approaches often regarded mass media as catalysts for modernisation: spreading innovations, raising 'consciousness', improving agricultural and health practices, and uniting national publics. (Schramm and Coombs 1987). SITE belongs to that horizon. However, SITE also emphasises the key limitation of message-centred analysis: media are not just channels; they are institutions and infrastructures embedded in power relations. Therefore, evaluating 'impact' only at the level of individual learning or behaviour is inadequate. (Bharthur Parthasarathy 1991).

Conceptual Framework: C4D as infrastructure governance; mass-media centricity

This paper shifts the focus from message effects to infrastructure governance. In this perspective, C4D outcomes rely on who owns and manages infrastructures, how maintenance and access are organised, what incentives influence scheduling and measurement, and whether equity designs are institutionalised or regarded as temporary exceptions. SITE is particularly valuable analytically because it combines hardware, software, training, maintenance, and evaluation, making the socio-technical system visible.

Mass-media centricity is regarded here as a policy habit: the repeated assumption that large-scale communication infrastructures are privileged tools for development, often under-representing social structures, local power dynamics, and accountability. Apex infrastructures appeal politically because they are visible, scalable, symbolically modern, and narratable as national achievements. SITE both exemplifies this attraction and exposes its limits.

A Disjunctured approach

The concept of Disjunctured continuity is used in this article to oppose the lure of seamless historical storytelling often seen in accounts of communication and development in India. Media configurations—from community television under SITE to national satellite networks and platformised digital infrastructures—have shifted in a discontinuous manner, frequently disrupting earlier institutional arrangements. However, the underlying rationalities through which communication technologies are envisioned, legitimised, and managed exhibit striking persistence. By analysing the separation of media form discontinuity from the continuity of institutional logics, the article avoids both celebratory narratives of technological progress and accounts of decline and loss. Instead, what emerges is a recurring pattern of equity aspirations alongside institutional drift—a tension that the Satellite Instructional Television Experiment (SITE) makes clear.

It draws on field-based recollections from SITE's operational period and views the village viewing room as a social space in which hierarchy, translation, and access shape reception and meaning. An institutional analysis was applied to examine the interconnected institutions, their incentives, and the dynamics that create gaps between 'promise' and 'performance'. (Katz and Wedell 1977) in technology transfer and deployment. This approach addresses the limitations of impact studies that focus on individuals while overlooking the institutional frameworks that shape communication systems.

This article offers a contemporary look back rooted in two vantage points: (a) the lived experience of SITE as a field-based research endeavour, and (b) an institutional perspective on how SITE's development aims interacted with policy priorities and the political economy of broadcasting. (Sanjay 1991). The intention is not to re-litigate old debates, but to make SITE legible to present-day readers who face analogous questions about technology, scale, equity, and governance.

SITE in brief: scope, architecture, and daily life

SITE operated from 1 August 1975 to 31 July 1976, using NASA's Applications Technology Satellite ATS-6, repositioned to serve the Indian footprint (NASA–DAE Memorandum of Understanding, 1969). The experiment delivered television programming to approximately 2,400 villages across six states via direct reception sets—community-viewing installations installed in public buildings. Each site typically relied on a local custodian, often a schoolteacher.[3], who ensured the set was operated, safeguarded, and made available for collective viewing (Department of Space, SITE Reports).

SITE's programming structure followed a clear temporal logic. Morning broadcasts focused on formal education and capacity development: children's programmes and in-service teacher

training. Evening broadcasts targeted community audiences: content presented as developmental and socially relevant, covering topics like agriculture, health, and family welfare (Doordarshan/SITE Programme Schedules). This arrangement was significant. It aligned content with daily routines, aimed to boost attendance, and subtly reinforced learning through shared viewing experiences.

Equally important was SITE's support infrastructure. Technology that reaches villages is only as effective as the maintenance systems that keep reception equipment working. During SITE, a network of maintenance centres and technical support arrangements was established to keep sets operational across dispersed rural regions. (Chaudhri 1986). The project aimed to standardise routine custodian responsibilities, viewing arrangements, and fault reporting—so that the experiment could be evaluated

A field researcher's window

For those of us who conducted field research during SITE, the most enduring memories are not of the satellite itself but of the village viewing room as a social space. A working television in a public building quickly became a site where questions of access, authority, and everyday hierarchy played out. Who sat where? Who spoke after the programme? Who translated unfamiliar terms into the local idiom? Who decided whether women and children could attend freely? These micro-dynamics were not peripheral—they influenced exposure, interpretation, and discussion, thereby shaping what "impact" could reasonably mean. Sometimes, there were days when the televisions were not functioning, and out of frustration, I wrote to my academic mentor, Prof Eapen, whose only response was that the scope was not only about the television's functionality but also about the factors in rural areas (circa 1970s) that contributed to the sets' failure (SITE field notes).

From a research standpoint, SITE required a discipline that contemporary media projects sometimes underestimate: repeated field visits, patient observation, and careful triangulation. Attendance counts rarely told the whole story; one also had to note who stayed through an entire programme, who arrived late because of farm or household work, and how viewing patterns changed with seasons and village events. This is one reason SITE's legacy cannot be read solely through technical metrics; it must be read through social organisation and local governance.

An important dimension of the project was its default timing, which coincided with the declaration of the Internal Emergency by the then Prime Minister. During this period, the Emergency and the formal use — or misuse — of broadcast media, along with strict control over all other forms of communication, remained in force throughout the experiment(Dass KK 1977). These conditions shaped the environment in which SITE operated. At the field level, additional dynamics influenced how villagers perceived any government-led initiative.

The memory of the aggressive family planning drive of 1975–76, which had partly alarmed and alienated rural communities, contributed to a sense of suspicion and caution. As a result, SITE was not simply seen as a technological experiment but was interpreted through the lens

of broader political and social experiences, making villagers' responses complex and layered. (WILLIAMS 2014).

Origins and the logic of technology transfer

SITE did not "begin" in 1975. It was the visible crest of a longer wave of institutional and technological developments. In the United States, the ATS programme emerged from NASA's applications orientation and the politics of demonstrating public benefit from space research. (NASA Technical Reports Server (NTRS) 1981; Smith 1977). The satellite's availability for international demonstrations reflected both technical opportunity and policy choice: a willingness to showcase a peaceful application of space technology in a high-visibility development context.

A critical strand in communication theory has long rejected the assumption that technologies function as neutral instruments applied to pre-given social goals. Thinkers such as Jacques Ellul, William Melody, Herbert Schiller, and Ashok Joshi have argued that communication technologies are better understood as institutionally embedded systems.(Ellul 1964; Joshi 1985) shaped by political economy, organisational incentives, and historical power relations (Melody 1973, 1981; Nordenstreng and Schiller 1979). Technologies, in this view, do not merely carry development; they actively structure the conditions under which development is imagined, governed, and evaluated.

Ellul's notion of technique foregrounds how technological systems, once institutionalised, acquire autonomy: efficiency becomes an end in itself, displacing ethical judgement and social deliberation. Applied to communication infrastructures, this suggests that systems such as satellite broadcasting privilege scale, speed, and managerial rationality over local relevance and participatory agency. SITE's design—community viewing, local custodianship, intensive maintenance, and integrated evaluation—temporarily resisted this tendency but did so under exceptional experimental conditions rather than through durable institutional arrangements.

Political-economy critiques by Melody and Schiller further demonstrate that communication technologies are never socially neutral. Technology development and transfer reflect geopolitical interests, industrial strategies, and state priorities, often embedding asymmetries between technology producers and adopters. In the Indian context, Joshi and others have shown that development-oriented communication systems frequently promise empowerment while simultaneously reinforcing centralisation, unless countervailing governance mechanisms are explicitly institutionalised.

This makes the distinction between technology development and technology deployment analytically crucial. Development phases—pilots, demonstrations, and experiments—can temporarily align technological systems with equity and public value. Deployment phases, by contrast, expose technologies to routine institutional incentives: revenue generation, administrative simplification, political visibility, and audience aggregation. The resulting drift is not a failure of technology per se, but an outcome of embedded institutional dynamics. SITE exemplifies this broader lesson: communication technologies are not neutral solutions

to development problems; their social consequences depend on how power, incentives, and accountability are organised around them.

In India, SITE's origins were tied to three institutional influences. First, there was a longstanding focus on planning that saw mass media as a tool to support rural education and modernisation. (Bharthur 2006; Nehru 1958). Second, the emergence of television in India was influenced by international assistance and philanthropic initiatives, including UNESCO and the Ford Foundation, which promoted educational television projects and training infrastructures. (Basuik et al. 1977; Engelman 1983). Third—and most consequential for SITE—was the rise of the Indian space sector. Its leadership played a central role in shaping this direction. Sarabhai, in particular, believed that advanced communication technologies could support national development and help build indigenous scientific and industrial capability.(Sarabhai 1969, 1970).

Research, evaluation, and critique.

M. S. Gore's cumulative evaluation of the Satellite Instructional Television Experiment (SITE) concluded that while the project achieved modest but real gains in awareness and short-term knowledge in areas such as agriculture, health, hygiene, nutrition, and family planning, these gains were highly uneven and contingent on local social structures, including caste, gender norms, and seasonal labour patterns that shaped who viewed, how often, and with what interpretive support. The evaluation underscored that SITE's effectiveness depended less on the satellite technology itself and far more on the village-level institutional ecosystem—the functioning of community sets, the reliability of maintenance chains, custodian involvement, and the presence or absence of complementary field-level services. Equipment breakdowns, inconsistent uptime, and weak follow-up services limited the impact, leading Gore to argue that SITE validated the feasibility of satellite-based communication but not its developmental potential. Ultimately, the evaluation framed SITE as a successful systems demonstration whose developmental potential was constrained not by the technology but by the institutional, organisational, and social conditions required to sustain and deepen change (Gore, 1983).

K. E. Eapen's assessment of the Satellite Instructional Television Experiment offered a sharply sociological counterpoint to technological optimism, arguing that SITE exposed the limits of treating communication technologies as autonomous engines of development. Drawing on evaluation findings that showed highly uneven outcomes shaped by caste hierarchies, gender norms, local authority structures, and variable equipment functioning, Eapen insisted that the experiment did not demonstrate television's transformative power but rather the enduring force of social mediation in rural India. He challenged the assumption—shared by planners and many international advocates—that pictorial messages could leapfrog structural inequalities or propel an illiterate population into new developmental stages. For Eapen, genuine development required decentralised communication, local participation, institutional follow-through, and grounded social reform, not large, centralised, technologically spectacular systems. His critique thus reframed SITE as a lesson in institutional realism, showing that while media configurations may change, the structural constraints governing communication and development persist, and

only context-sensitive, community-anchored communication can meaningfully address them. (Eapen 2006).

Transition to INSAT

This divergence is central to SITE's legacy. It illustrates that "success" depends on institutional vantage points: technological feasibility versus socio-economic transformation. The rapid transition from SITE to INSAT—initiated before a complete assimilation of evaluation findings—suggests that institutional momentum and strategic ambitions of the space and broadcasting sectors played a decisive role (Department of Space; INSAT Planning Papers). The argument that a centralised national television broadcasting system necessitates the transition to INSAT was made even while the experiment was in progress and full-scale social evaluation results were not yet available.

A distinctive feature of SITE was the integration of research across the project cycle: planning, village selection, programme design, audience studies, reception monitoring, and post-exposure evaluation. (Agrawal and Binod 1981; Space Applications Centre Celebrates Ruby Year of SITE - ISRO n.d.). While most studies emphasised technological success and audience comprehension, the Planning Commission's evaluation diverged sharply, questioning SITE's developmental impact and its relevance for immediate large-scale rural television expansion. (Sanjay 1991)

After SITE ended in 1976, the experiment did not simply conclude; it left behind a way of thinking about communication infrastructures that shaped everything that followed. In the years immediately after SITE, India moved quickly into the INSAT era, carrying forward the belief that large, centrally managed communication systems could serve multiple national objectives simultaneously. The transition from ATS-6 to INSAT was therefore not only a technological upgrade but also a shift in institutional direction, in which satellite capacity became an apex resource to be allocated across education, information, telecommunications, and later data services. This marked the beginning of a platform-like approach to national communication: build a central system, plug different uses into it, and measure success through coverage and reach rather than through deeper questions of local participation or equity.

One of the clearest continuities between SITE and its aftermath lies in how pilots and demonstrations differ from long-term deployment. SITE worked as well as it did because it was treated as an experiment that deserved exceptional coordination, maintenance intensity, and on-the-ground support. Once those conditions changed, equity features—like community viewing, facilitated interpretation, frequent repairs, and integrated research—proved difficult to sustain. In the INSAT era, responsibilities were scattered across agencies and contracts, and maintenance shifted from being a public good to a compliance task. This predictable drift reappears in contemporary digital education initiatives, where pilot programmes receive careful facilitation, but routine rollouts often lack the support structures that actually determine who benefits. In this sense, SITE helps show that equity is rarely lost at the design level; it is usually lost at the deployment level.

A major transformation after SITE was the movement from community-based access to household-based access. During SITE, one television in a public building created a shared space for collective content viewing. This structure encouraged discussion, translation, and mediated participation. However, as broadcasting expanded and consumer markets grew, access shifted into private homes.

With commercial broadcasting came audience ratings, advertising considerations, and programming shaped by market-driven visibility (Subramanyam, 2009). Later, the rise of personal digital devices intensified this shift even further: access became individualised, and visibility became dependent not on signal coverage but on the logic of recommendation systems and feeds. Although media forms changed dramatically, the underlying pattern remained: those who already had stronger social resources benefited more, whether from household receivers in the 1980s or from smartphones and data packs in the 2020s. Another throughline is the evolution of measurement. SITE relied on comprehension studies, experiments, and cumulative evaluation to understand learning and participation. As systems scaled, these forms of evaluation were replaced by audience ratings and later by digital engagement metrics such as watch time and click behaviour. Each shift altered what counted as value. In the broadcast era, value was defined by aggregated audience size; in the platform era, value is defined by continuous engagement. This tends to privilege content that captures attention rather than content that deepens understanding. SITE's integrated evaluation reminds us that technology succeeds as a public good only when evaluation is tied to learning and participation rather than to visibility or engagement alone.

The INSAT period also introduced a new kind of control point. Where the SITE depended on uplink control and scheduling, the modern platform environment centralises control in identity systems, app stores, recommendation algorithms, and data governance rules. These new chokepoints shape who can speak, who can reach an audience, and who is visible at all. Without explicit public-service mandates embedded at these control points, systems drift toward administrative convenience and commercial optimisation. The issue is no longer broadcast scarcity but datafied scarcity—scarcity of attention, credibility, and algorithmic visibility.

SITE also demonstrated something that remains true today: participation does not emerge automatically from access. During SITE, who sat where, who translated, who mediated discussion, and who controlled entry into the viewing room determined actual learning. In digital contexts, similar dynamics surface in who controls devices, passwords, data allowances, and language settings. For communication technologies to function as public goods, participation must be intentionally designed—not left to chance. That includes facilitation, training, local adaptation, and rules that prevent local gatekeeping from quietly excluding marginal groups.

Writers like K. E. Eapen warned early on that no communication technology, however modern, could shortcut the slow work of social reform. His critique of leapfrogging—first applied to television—maps cleanly onto the platform era. Today, too, there is a belief that personalised apps, AI tutors, and large-scale digital programmes can overcome structural

inequality by virtue of their scale and reach. However, SITE's evidence, along with its later institutional history, shows that without durable, well-funded institutions to maintain, mediate, and support these systems, technology alone cannot close knowledge gaps or transform social conditions.

Finally, SITE leaves behind a methodological lesson: to understand any communication system's developmental value, one must examine governance, not just content. Across the decades, the same pattern recurs: feasibility (coverage, uptime, reach) is easy to institutionalise, while equity (participation, maintenance, relevance) requires ongoing attention and accountability. This pattern continues into the platform era, where systems expand rapidly, but public value does not automatically follow. For contemporary policy, the task is not to replicate SITE's form, but to carry forward the principle that communication infrastructures become genuinely developmental only when supported by governance arrangements that fund maintenance, preserve equity, and link evaluation to real improvements in access and learning.

Conclusion

Viewed from the perspective of fifty years, SITE remains significant not because it proved that satellites could transmit television signals to villages—a fact now seen as technically routine—but because it shed light on the institutional conditions under which communication technologies may or may not support development objectives. SITE demonstrated that equity-focused designs, such as community viewing and locally relevant programmes, require ongoing governance, maintenance, and policy support to endure beyond the experimental phase. These insights remain highly relevant to current debates on digital education platforms, satellite connectivity, and technology-driven "leapfrogging" strategies in development policy.

The transition from SITE to INSAT was both an unavoidable outcome and a strategic decision. Satellite technology reinforced the centralised control the government had aimed for since independence, and the national networking of radio and television was considerably enhanced. At the same time, the rapid spread of television in the 1980s created a new tension between the previous developmental approach and the increasing pressure to commercialise broadcasting. Both radio and television expanded through the private sector, despite oligopolistic patterns that influence and limit the public sphere argument. Numerous changes have taken place in our digital ecosystem today, which, on one hand, have expanded the scope and nature of communication access, while also raising broader issues of corporatisation and surveillance in governance. New media configurations, platformisation, and related trends enhance community and individual spaces but also raise concerns about misinformation and disinformation, which continue to challenge the fault lines within our political and economic systems.

Postscript

SITE was discussed in several forums across the country, including at MIC on two occasions, where we incorporated it into our seminars. Former SITE leaders such as Chitnis, Kiran Karnik, Binod Agrwal, and Arbind Sinha, among others, participated in these discussions. We

were especially honoured to meet Prof Chitnis and conduct a lengthy interview with him. The fifty years of SITE coincided with the ICA regional hub conference in Manipal. A panel was organised to reflect on this milestone. Kiran Karnik, one of the key management and planning resource persons for ISRO/SAC, participated and shared his perspective, which not only looked back at the trials and tribulations involved in planning and executing the experiment but also offered reflections on the current communication ecosystem. Binod Agrawal's papers and files available with MIC contain observations and notes from that period, some of which are also published. Dr Arbind Sinha, a prominent social scientist, reflected on the field dynamics of SITE team visits to Bihar during a related meeting.

IISER Pune hosted a Centenary Celebration Conference on 28 July 2025, honouring Prof. Eknath Vasant Chitnis, a key figure in India's space programme. The event featured an exhibition and speeches highlighting his contributions. Two ISRO veterans – Kiran Karnik and Dr Pramod Kale – who worked closely with Prof. Chitnis during ISRO's formative years, reflected on his pivotal role in implementing the monumental SITE project. SITE faced formidable administrative and technical challenges, yet Prof. Chitnis steered it to successful commissioning on 1 August 1975, during the Emergency (imposed on 25 June 1975). Dr Kiran Kumar noted how SITE's success and the realisation of its benefits for rural India catalysed ISRO's subsequent telecommunications (INSAT) and remote sensing (IRS) programmes, bringing transformative benefits to rural communities. Prof. Chitnis passed away on 22 October 2025, aged over 100, amid a flood of tributes for being one of the key architects of SITE. Manipal Institute of Communication is proud to possess an interview recording of Prof. Chitnis from 2024.

References

Agrawal, and C. Binod. 1981. *SITE Social Evaluation: Results, Experiences and Implications. Ahmedabad: Space Applications Centre*.

Basuik, Victor, Becker, ; Jorg, Ramiro Beltran, and Luis. 1977. "The Influence of The Carnegie, Ford and Rockfeller Foundations on American Foreign Policy: The Ideology of Philanthrophy" edited by B.S. *Bhat, Vignesh N. Mind Managers and Defiled Doordarshan* 25(2):187–93.

Bharthur Parthasarathy, Sanjay. 1991. "The Role of Institutional Relationships in Communication Technology Transfer: A Case Study of INSAT." PhD Thesis.

Bharthur, Sanjay. 2006. "Communication Policies in the Nehru Era." http://asu.thehoot.org/story_popup/communication-policies-in-the-nehru-era-1927.

Chaudhri, Mohammad Munawar. 1986. "India: From SITE to INSAT."

Dass KK. 1977. "White Paper on Misuse of Mass Media."

Eapen, K. E. 2006. "The Cultural Component of SITE." *Journal of Communication* 29(4):106–13. doi:10.1111/j.1460-2466.1979.tb01751.x.

Ellul, Jacques. 1964. *The Technological Society*. New York: Alfred A. Knopf.

Engelman, Ralph. 1983. “From Ford to Carnegie: The Private Foundation and Rise of Public Television.” in *Culture and Communication edited by Sari Thomas*. ABLEX Publishing Corporation.

Gore, MS. 1983. “The SiITE Experience - UNESCO Digital Library.” https://unesdoc.unesco.org/ark:/48223/pf0000057988.

Joshi, Ashok. 1985. “Technology, Communication and Power.” *Economic and Political Weekly* 20(25–26):1081–86.

Katz, Elihu, and George Wedell. 1977. *Broadcasting in the Third World Promise and Performance*. Cambridge, MA: Harvard University Press.

Lerner, Daniel. 1972. “Communication for Development.” in *Southeast Asia Development Advisory Group*. New York.

Melody, William. 1973. “The Role of Public Advocacy in Public Policy and Planning.” *Communications Technology and Social Policy*.

Melody, William. 1981. *The Economics of Information as a Resource and Product*. Hawaii.

NASA Technical Reports Server (NTRS). 1981. *NASA Technical Reports Server (NTRS) 19820008277: ATS-6 Engineering Performance Report. Volume 4: Television Experiments*.

Nehru, Jawaharlal. 1958. *Jawaharlal Nehru Speeches Volume 3 March 1953 to August 1957*. Publications Division.

Nordenstreng, Kaarle, and Herbert I. Schiller. 1979. “Direct Broadcast Satellites and Integrity of National Cultures.” in *National sovereignty and international communication*. Ablex Pub. Co.

Sanjay, Bharthur Parthasarathy. 1991. “The Role of Institutional Relationships in Communication Technology Transfer: A Case Study of the Indian National Satellite System (INSAT).” National Library of Canada = Bibliothèque nationale du Canada, Ottawa.

Sarabhai, Vikram A. 1969. *Television for Development,*. Ahmedabad: Rajratan Press.

Sarabhai, Vikram A., ed. 1970. *INSAT- a National Satellite for Television and Telecommunication,*. Ahmedabad: Rajratan Press.

Schramm, Wilbur, and PH Coombs. 1987. *New Educational Media in Action: Case Studies for Planners-1*. Paris: International Institute for Educational Planning.

Smith, Delbert D. 1977. *Communication via Satellite: A Vision in Retrospect.* A. W. Sijthoff.

Space Applications Centre Celebrates Ruby Year of SITE - ISRO. n.d. Retrieved November 30, 2018. https://www.isro.gov.in/space-applications-centre-celebrates-ruby-year-of-site.

Subramanyam, Chitra. 2009. “1982-Colour Television Is Introduced: Out of the Dark Ages.” *India Today*, December 24.

WILLIAMS, REBECCA JANE. 2014. “Storming the Citadels of Poverty: Family Planning under the Emergency in India, 1975-1977.” *The Journal of Asian Studies* 73(2):471–92. http://www.jstor.org/stable/43553297.