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SATELLITE-BASED INSTRUCTIONAL MEDIA: A GLOBAL BROADCAST SYSTEM ANALYSIS WITH REGIONAL FOCUS ON INDIA

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ABSTRACT

Introduction: This research investigates satellite-based educational communication with a focus on learning about and contrasting various broadcasting systems throughout the world, particularly as they pertain to India.

Aim of the study: the main aim of the study is Satellite-based instructional media: a global broadcast system analysis with regional focus on India

Material and method: The purpose of this research was to learn more about broadcasting networks and the educational programming they air on television.

Conclusion: Experiments in India, Canada, Latin America, and China have all shown the enormous potential of employing satellite TV for educational reasons.

INTRODUCTION

1.1 OVERVIEW

This research looks into satellite-based educational communication with a focus on learning about and contrasting various broadcasting systems throughout the world, particularly as they pertain to India. The goal of this research is to learn more about the state of educational broadcasting in Europe, Asia, and the United States via an examination of their respective broadcasting systems. In order to draw conclusions about the structure of a broadcast policy, we need to examine and contrast the existing broadcast systems. The study, which is descriptive in nature, addresses pressing concerns in light of recent advances in the broadcast systems of Europe, the United States, and Asia made possible by means of communication satellites. As a result, we choose and poll the most developed and developing Asian countries. Many Asian nations have seen a shift in their broadcasting landscape with the introduction of communication satellites. Therefore, broadcasters need to reevaluate their position in light of the changing circumstances. Satellite communication technologies have shown their worth in delivering data for development and planning in addition to services in the fields of education, healthcare, and telemedicine.

Education is crucial because it provides the foundation for a skilled and productive labor force, which is essential for the growth of national economies. This is best demonstrated by the "Education for All" campaign, which aims to fulfill the UN Millennium Development Goals (MDGs) by ensuring that all children, youth, and adults have access to a minimum level of education. Due to the importance of knowledge in growth (knowledge is power,') higher education and lifelong learning are more crucial than ever before. The degree of knowledge and education in a country is crucial to its ability to progress socially and economically. No nation can claim to be economically dominant while also being

educationally behind. The educational systems and economy of Russia, the United States, and Japan are among the world's best. These nations understand the need of investing in education and training to foster growth in their economies and their people resources. Yet there are enormous disparities in students' opportunities to get a good education.

1.2 SATELLITE COMMUNICATION

The development of satellite communication has the potential to significantly impact the future. From the first satellite phone call to the current worldwide coverage of the Olympics, which attracted more than 3 billion spectators, satellites have contributed greatly to the establishment of a sense of global community. Satellite technology now powers 60% of all international communications. The broadcast and mobile communication sectors of the worldwide satellite communications business have entered a new development phase. The current communication sector depends on a wide range of professions, yet technical prowess is still crucial to success. The capacity to grasp technology and adapt to the changes in the business landscape brought on by technological development is crucial. The convergence of information and communication technologies has revolutionized interpersonal and professional interactions. With the development of IT, hitherto unavailable global resources are now within reach of the average person.

All forms of electronic communication—telephone, television, and computer networks—have contributed to the development of a global information infrastructure (GII) that can transmit any kind of data, speech, or video. Voice in telephones, text in faxes and newspapers, graphics in TV broadcasts, and data in computers are today all considered to be forms of information. Multiple media types may now be sent in a single data stream. —Multiple distribution mechanisms, including satellite cable, etc., are possible inside the transmission system. Multiple services may be delivered via a single connection. Thus, the broadcaster has evolved into a source of news and data. Broadcasting is becoming an integral part of the larger framework that is the global information infrastructure.

LITERATURE REVIEW

Sjuchro, Dian (2023) Broadcasting in rural areas is a powerful medium for reaching underserved communities with messages of hope and opportunity. In order to provide well-informed suggestions for rural broadcasting regulation, further study of this issue is required. Research on rural broadcasting is most often published in M/C Journal, IEEE Transactions on Broadcasting, and Media Culture & Society Journal, according to a bibliometric analysis conducted by Evangelos M. Pallis of Hellenic Mediterranean University. Although it occurs just four times, the term "UHF" appears more often than any other phrase in the names of these investigations. As can be seen from the names of the majority of the studies devoted to the topic, rural broadcasting research is conducted most often in China, Thailand, and Nigeria. Word cloud analysis shows that "rural broadcasting" and "radio" are often used in the names of these research projects. There are 62 occurrences of these words. Many different aspects of radio, digital, and television broadcasting in rural areas have been the focus of recent studies. Studies in this area often center on television.

Mehta, Smith (2020) In this piece, I examine the many factors that have drawn certain artists, including authors, directors, actors, producers, and casting agencies, to devote their efforts primarily

to online entertainment. The article's primary results show that an increasing number of Indian content creators and new media practitioners are turning away from traditional television in favor of digital distribution channels because they are disillusioned with its programming and industrial practices. This study uses a critical media industry studies framework to look at how professionals in the Indian content creation industry deal with the larger structural tensions between television and the Internet in their day-to-day work. Evidence from qualitative interviews, industry publications, and news stories is compiled to support the claim that the production culture in the television business inhibits artists from pursuing meaningful work in favor of chances found on the Internet.

Krige, John & Callahan, Angelina & Maharaj, Ashok (2013) NASA's Satellite Instructional Television Experiment (SITE) provided instructional television to the Indian market. NASA's Application Technology Satellite-6 (ATS-6) was used for this experiment to provide televised instructional programming to groups of homes in rural areas. In 1969, NASA and India's Department of Atomic Energy (DAE) inked the agreement that would eventually become SITE. From August 1975 to July 1976, the project was carried out, during which time it was widely covered by the media. Some aficionados lauded it as the greatest sociological experiment ever conducted, and it was promoted as a gigantic experiment in social engineering.

Raju, P. & Gupta, P. (2012) Satellite communication services such as television broadcasting, mobile communication, cyclone disaster warning and rescue operations, etc. are provided as part of the Indian Space Research Organisation's (ISRO) Space Program to help the rural population of India improve their economic situation, agricultural output, and access to education. In 1975 and 1976, ISRO and NASA collaborated on an experimental satellite communication project called Satellite Instructional Television Experiment (SITE), which used NASA's Advanced Telecommunication Satellite (i.e. ATS 6) to broadcast educational programming to over 2,600 remote villages across six Indian states and territories. India has developed its own communication satellites throughout the years to fulfill the country's growing communication needs. Since then, ISRO has launched EDUSAT, a satellite dedicated only to educational objectives, allowing for the transmission and reception of high-quality audio and video information and the recreation of interactive virtual classrooms. Established in 1966, the Indian Institute of Remote Sensing (IIRS) is a leading institution in the region for the dissemination of Remote Sensing (RS) and Geographical Information System (GIS), with a primary emphasis on contact-based programs. In 2007, nevertheless, they branched out by using the specialized communication satellite i.e. EDUSAT to facilitate university-based distance learning programs.

Raju, P. & Gupta, P. & Roy, Parth (2012) When it comes to evaluating, quantifying, developing, and managing resources, planning and infrastructure development, utility services, etc., geoinformatics is a highly specialized field that deals with Remote Sensing, Geographical Information System (GIS), Global Positioning System (GPS), and field surveys. Since its founding in 1966, the Indian Institute of Remote Sensing (IIRS) has been widely regarded as a vital institution for capacity Building in this niche field. IIRS has begun an outreach program to teach colleges and institutions the fundamentals of Remote Sensing, GIS, and GPS in response to the high demand. In 2004, ISRO deployed a

communication satellite called EDUSAT (Educational Satellite) to fulfill the growing need for an interactive satellite-based distant education system in India. IIRS's remote learning program has employed EDUSAT (recently switched to INSAT 4 CR owing to cessation of services from EDUSAT) to provide foundational Remote Sensing, GIS, and GPS instruction to colleges throughout India. When a lecture is provided using EDUSAT satellite communication, it is comparable to an e-learning approach but with the added benefit of live interaction sessions between the instructor and the students. Interactions are not limited by Internet bandwidth issues because to the high quality of the reception.

METHODOLOGY

The purpose of this research was to learn more about broadcasting networks and the educational programming they air. There are so many nations in the globe that it was challenging to choose the right ones to study. Yet significant developed and emerging nations were chosen. The developed world is equipped with the know-how to crack some communication codes. In order to speed up their own socioeconomic growth, emerging countries are increasingly turning to technology. Broadcasting is a crucial part of the technological infrastructure for spreading information and raising public consciousness. New educational technologies have emerged and been widely used in recent years. Broadcasting networks have also stepped up to the plate to inform and educate audiences. Technology-based distant education programs are one sector that has benefited greatly from electronic media. Distance learning using modern technology has greatly improved in terms of quality. The research is confined to both developed and developing nations in an effort to promote a culture where science and technology education receives top priority and raise public awareness.

3.1 Analysis

The analysis's framework was created with the use of broadcast material from several platforms. The broadcast contents of developed and developing nations provide the basis for the division of a typical broadcast system's broadcast contents. The goals will be compared to the current state, history, and future of educational broadcasting in order to draw conclusions. It is hoped that the proliferation of cutting-edge technological tools has allowed the electronic media to better fulfill its mission of providing diverse societies, both in the developed and the developing worlds, with the education, production, and informational material it need to thrive.

RESULTS

Broadcasting provides a vital connection between the government and the governed, ensuring that voters are well-informed and contributing to a healthy democracy. Broadcasting is the most cost-effective and widely available method of educating the public, which is why it is being used to achieve this goal. As the globe shrinks into a global village, every country must compete for the best talent, resources, and economic opportunities. Countries must avoid being cut off from the rest of the economic world. Therefore, broadcasting is quite important in this respect. It is possible to tailor educational programming in the areas of health, trade, agriculture, research, investment, and business to the specific needs of each countries. Thanks to advancements in satellite communications, it is now possible to concurrently communicate with big audiences dispersed over great distances inside a nation. It's shown to be an effective resource for teaching about global development.

4.1 EDUCATIONAL BROADCASTING

4.1.1 JAPAN

In Japan, educational television is a cutting-edge network that broadcasts shows for viewers of all ages, from toddlers to retirees. Entertainment, linguistic exploration, and social programming complement the academic content. Teacher programs on NHK's educational broadcasts aim to help students better grasp concepts that would be difficult to learn from textbooks alone. This station airs not just news in sign language but also a variety of shows geared at people with disabilities. The network also features cutting-edge multimedia presentations.

BS-Hi Weekly Program Mix 2008

CATEGORY	PERCENTAGE	HOURS
News	15%	21hrs 52m
Education	14.3%	20hrs 58m
Culture	44.2%	64hrs 31m
Entertainment	26.5%	38hrs 39m
Total	100%	146hrs 00m

The BS-1 satellite in Japan broadcasts various news and sports shows, both domestic and international. The channel provides in-depth coverage of world events, live broadcasts of big sporting events like the Beijing Olympics, and other exceptional documentaries.

4.1.2 CHINA

China places a premium on education because it believes that it is the key to a better society. As the Chinese economy has expanded, the government has placed a higher priority on education, and the educational needs of the population as a whole have grown. The launch of the China Education Television (CETV) station in July 1986, the airing of the first special TV channel for satellite education, and the inauguration of the second special channel all marked significant steps forward in the development of satellite distance education in China. CETV is a national, educational television network that creates and airs a wide variety of instructional shows. In 1987, China Education Television (CETV) went on the air, and in 1988 and 1994, two further stations dedicated to broadcasting educational content were launched.

Chinese programming in 2000 (In terms of total broadcasting hours)

CATEGORY	PERCENTAGE
News	10%
Documentary & Magazine Show	10%
Educational	2%
Entertainment	60%
Service oriented Advertising	18%

4.1.3 INDIA

One of the biggest terrestrial networks in the world is India's Doordarshan, which is committed to public service broadcasting. Doordarshan, which has a channel count in excess of fifty, offers three levels of programming: national, regional, and local. Events and concerns of national significance are highlighted in National programming. These shows range from news and current events to magazine shows and documentaries on topics including science, art, culture, the environment, social concerns, fiction series, dance, theater, and cinema. The regional programming is broadcast in the regional language and idiom on the Regional Language Satellite Channels and at designated periods on DD National. The regional shows focus on topics and people in that region.

India's educational TV network, DD-Gyan Darshan, is a collaboration between Doordarshan and the Indian National Open University. The IGNOU's Electronic Media Production Centre in New Delhi is where they broadcast their shows to the public. Courses for elementary and secondary schools, as well as open schools, teacher training, open and online education, vocational education, and special education are all included in the curriculum-based programs. Career counseling, computer classes, test-taking strategies, ed-entertainment, cultural programming, travel shows, and other shows with positive, constructive messages are also broadcast. Department of Environment and Forests, Ministry of Rural Development, Department of Electronics, Ministry of Health, National Aids Control Organization, UNICEF, Department of Science and Technology, National Entrepreneurship Board, and National Book Trust are just some of the organizations that have already committed software to the channel.

EDUSAT- The Indian Satellite for Education

ISRO has begun focusing on "Tele-Education" with the launch of EDUSAT, a satellite designed specifically to meet the educational requirements of India. Supplementing curriculum-based instruction with effective teacher training and encouraging community involvement, EDUSAT bolsters educational initiatives. —National and regional EDUSAT-based networks may have either receive-only (unidirectional) terminals or interactive (two-way) terminals, or both. Live lectures/PowerPoint presentations with student interaction, web-based learning, interactive training, virtual laboratory, video conferencing, data/video broadcast, database access for reference material/library/recorded lectures etc., online examination and admissions, distribution of administrative information, etc. can all be facilitated by the networks.

Program composition of Doordarshan Channels- 2008 DD National

Program Category	Percentage
Parliament	1.20
Sports	4.70
Entertainment (including public service)	54.60
Educational	9.80
News & Current Affairs	8.50
Environment	2.10
Children‘s programs	0.60
Others	18.50

DD India

Program Category	Percentage
Serials	26.0
News & Current Affairs (Including Business)	18.0
Music	09.0
Children	04.0
Regional Language Programs	03.0
Health & Sports	10.0
Feature Films	21.0
Events & Tourism	05.0
Others	04.0

DD Regional

Program Category	Percentage
Parliament, Assembly	0.10
Sports	0.8
Public service	14.2
Entertainment	55.4
Educational	11.2
News & Current Affairs	13
Environment	0.1
Children's programs	1.1
Others	4.1

DD News

Program category	Percentage
News	74.89
Informative Program including Current Affairs	24.79

DD Sports

Program Category	Percentage
Adventure sports	2.10
Fitness	4.20
Coaching	4.10
State Diary	2.10
Live Quiz Show	4.20

Live coverage	10.40
ENG/Rural Sports	4.20
Kendra's contribution / Sponsored programs	4.10
Road to Victory or Repackaged	4.20
Sports News	2.10
Specific Game Hours	8.30
Repeat	50.00

DD Bharati

Program Category	Percentage
Entertainment	33.0
Educational	30.0
Informative	37.0

Countries in growth, such as India, must reach the lowest classes with education that is focused on progress. Providing development education to underserved populations requires reaching them via their preferred medium and packaging that content such that it is credible, accessible, and useful. Here, the use of broadcast and satellite communication technologies becomes crucial. They are a powerful resource for teaching about global development.

CONCLUSION

Tests like SITE in India, followed by tests in Canada, Latin America, and China, have shown the enormous potential of employing satellite TV for educational reasons. In order to provide educational and other services to underserved communities, distance technologies based on ICTs are crucial. Both emerging Asian nations and wealthy nations like Canada face this problem. Education is the means through which one acquires both general knowledge and specific expertise. Organizations throughout the world now compete with knowledge in a new sort of economy called the information economy. The dissemination of information related to economic activities such as trade, commerce, business, and agriculture is facilitated through broadcasting. Therefore, broadcasters in each country make unique shows to meet the needs of their audiences. Many of the examined broadcast networks dedicate an entire channel to local educational requirements. Television has been recognized as having educational potential by educators. This is why broadcasting has become so important in many nations. There is a strong correlation between the prevalence of various forms of communication and the rate of development. These tools help spread knowledge, raise awareness, convey messages about development, and facilitate communication between target audiences and development professionals, all of which are crucial to the success of development projects.

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