HISTORICAL MAPPING OF THE COMMUNICATION TECHNOLOGY IN INDIA

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ABSTRACT:

This paper is about technological advancement took place in India over the period of time from colonial period till contemporary Digital India. This paper traces it in a historical contextualization of ‘time and space’ to analyze the relation between media and technology and its impact on culture of that particular era. From the vision of Empire and colonial time to the democratic values of nation building has a remarkable contribution to technological advancement which is directly related to modernization. The two concepts, ‘modernizations’ and ‘cultural shifts’ have been carried over time and the rationality of ‘time’ and ‘space’ bias reticent the media has elaborated with the implication of Harold Innis contribution to history and contemporary time. The empire has changed the shape but medium over which messages are transmitted or stored is carried over in the different forms of ‘media’ as
expressed largely by McLuhan’s writing on ‘Understanding Media’. So, the changes it brings with the power mounted by the kinds of media will be acknowledged in this paper and the contemporary Indian cultural shift would be the concluding remark with acknowledgement of the analytical account through reflections over the contextual academic writings. This paper is not only based on one particular media rather technology which enhanced social interaction from colonial period till now, will be included. How the spirit of users forming a particular culture of media and the views of state who introduces such media are different, it has been observed from the lens of cultural historiography.

**KEY WORDS:** Media, Time-bias, Space-bias, Cultural-shift, Technological-advancement, Communication.

**INTRODUCTION:**

Time and space are two important concepts in history which reflect the epistemology of the studies. Harold Innis \(^1\), explanations of time and space bias make it possible to understand the nature of media and also the ignored explanation of nature of social change. He introduced this concept of media bias to understand the nature of power endorsed by media to create a social and cultural change.

\(^1\) Harold A. Innis, involved in understanding history from a different media perspective which looks into two concepts Time and Space in the context of social change enforced by the power inhibit in the media. This idea of power is also derivates from Michael Foucault.
Space and time concept certainly doesn’t talk about the timeline of events rather it talks about the reasoning behind the event took place. Innis reflects upon the time-space bias in the context of media elaborate this reasoning with a very deep academic approach (Comor, 2001). The popular Marxist understanding of social change with the effect of mode of production and historical materialism ignores this understanding of time and space rather that theory has developed in the form of stages which did not look over this important question of time and space. That turns into a commonality in a dialectical fight between oppressor and the oppressed but the change in class of oppressor and the oppressed would certainly come out if we look at the time and space bias in different stages which is absent there. Innis says that some media has time bias nature and some have space bias.

If we look at oral stories, folktales, and folk songs it carries the time bias as the medium used for the content is restricted to a particular locality or space over which that oral recitation could be spread but the message can be transferred to generation over generation. On the other hand, media such as television and radio carries the space bias as they broadcast the content which can reach to distant places but could not hold for a long time.

This concept of time and space is contextualizing the nature of

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2 Marshal McLuhan, a Canadian thinker written about media and communication in the context of social change but he has derived a perspective of media carrying a social message which reiterative to upcoming social change. The book Understanding Media- the extension of man has become popular with this concept.
media and the social change taking place in a form of making-up of modern society (Comor, 2001). So, taking care of this concept of time and space which is essential in any historical study this paper critically looks into the contemporary society and new media in India. It is an implication of particular concept of time and space and under the analytical frame, those media would be overviewed. Harold Innis take media in the study of empires which is bringing changes in the response to the nature of the mode of communication. In Neo-liberal India, the development perspective with the idea of digital media, with a positivist perspective to encourage bringing change in society but the nature of this content must be studied with a historical mapping. On media, many scholars have given their views but Marshal McLuhan, a Canadian social thinker, have given a critical social perspective that is, in the philosophical perspective goes deep into the social and cultural trends it brings into society. He does not cater the positivist or materialist perspectives rather look at Media as a Medium of social change in contrast of Innis perspective. Based on those underpinnings this paper establishes the arguments to explain the critical social and cultural change in the contemporary India.

**METHODOLOGY:**

The method to collect the data is limited to secondary sources, which includes books, research articles, journals, periodicals,
news articles, conferences and seminars proceedings and etc. and this is also the limitation of this study because of the interdisciplinary approach of this paper. The technique of research is ‘Hermeneutic’ and the reasoning behind taking this technique is the demand of the secondary data based historical and sociological study. It has an explanatory nature as well as the interpretative skill which will help in implementing the concepts established with historical relevance would be able to correlate with contemporary problems.

**HISTORICAL ACCOUNT OF TECHNOLOGICAL INTERVENTION AND CULTURAL CHANGE**

The time India was under the rule of colonial Government, the social structure and culture have taken great shifts which were later on noticed by historians and social scientists who have included these under different headings. Some scholars have noticed the economic and political turns and some other have noticed the cultural and social changes. The writings of Irfan Habib who make remarkable trace of technology in the book “Technology in Medieval India c. 650- 1750” (Habib, 2009) and Bipan Chandra in context to colonial India include this perspective. The former one trace the means of communication as expressed that paper was used but the means of communication was through messengers’ relay or through horses in the time of Delhi Sultanate. In the time of Mughal’s
he noticed the change of Dhawa\textsuperscript{3} into the Dak-chauki (Post-station). It was mentioned that the difficulty level limit this technology to use it only for administrative purposes not for common public but for common people it had an indirect effect and which is:

“\textit{These modes of communication were not open to the public; however their functioning was important not only for the administration but also for public morale.}” (Habib, 2009, pp.101)

The analyses if we relate to the concept of bias of media the time bias is clearly visible as one can see the reach of message was limited over geographical region as the manual labor was inhibit in breaking the bias as this external force was link to the power relation behind the empire and Akbar tried to make it democratic through post stations but the media was consuming regress external force to make it space bias and which was not media’s own nature rather through external force.

So Innis’ concept of ‘bias of communication’ will be the core of this paper and turning this discussion towards technological intervention in the history focusing upon colonial period and its continuity in the present social structuring has been traced here

\textsuperscript{3}Dhawa: it was the designation given to post with runners established at every quarter or third or a half of a Kuroh(Kilometers) P.p. 100, IrfanHabib in technology in medieval India.
with identifying some important media which explains the reasoning under their time and space context.

A). It is not the first technological intervention but for India the intervention of Printing Press was remarkable. It was the first major observation of cultural transformation after the entry of printing press as a new media. Many social scientist and historian have noticed the impact of the printing press in Indian cultural transition particularly in civilization perspective and the knowledge domain. In that perspective, people earn particularly colonial schemes of development and cultural practices. The author of the book⁴ ‘The Printing Press in India’ has intended to present a social history of printing in India. In his conclusion, he states:

“We have therefore confined ourselves to an account of attempts to establish the printing press made by various agencies at different times in different parts of the country, and have presented a picture of the personalities and motives and capacities of the various participants in these attempts, the circumstances in which they had to function, the measure of their achievements and the reasons why the early attempts proved short-lived and did not lead to the development of the press on a nation-wide scale [Priolkar, 1958; p. 129]”

The content was now being able to retain for longer duration and people preserve the printed material to spread the information around. But as observed by scholars that this media establishment was a hardship not only because of the political intervention but also the limitation of the geographical borders as mentioned from Portuguese in Goa in A.D. 1556, it flows towards the British province where they wanted to provide the content- Bombay, Madras, and Bengal. Here the time bias was the nature of this technology, which made the content possible to perverse over the period of time but the space bias was invisible as it was following the limits to cross the space and limited itself to definite places. It was not only the observation rather the reasoning behind the nature of media which becomes the hurdle to spread knowledge all over India and why only some places encountered the cultural transformation with effect to the printing press. Later the industrial development takes it further and it has come up with a global effect of the formal education system with Print Media.  

B). After that in colonial period one revolutionary technology intertwined technological and industrial advancement into India which made a greater effect over cultural compounding of

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5 For the repeal of the 'taxes on knowledge', see A. Andrews, The History of British journalism (2 VOIS. 1859); J. Grant, The Newspaper Press (2 VOIS. 1871); H. R. Fox-Bourne, English News- papers (2 vols. 1887); C. D. Collet, History of the Taxes on Knowledge (2 vols. 1899). The effect of their repeal on newspaper circulations is shown in A. P. Wadsworth, 'Newspaper Circulations, 1800-1954', Manchester Statistical Society Papers (March 1955)
Indian society; that is ‘Railways’. Railways came for the purpose of trade and market orientation but the impact was over and above the expectations in the view to look at the cultural social domain\(^6\) (Satya, 2008). Marxist view over colonial India also points out the importance of Indian railways in the emergence of the capitalism (Chandra, 1981):

‘The railways would increase the productive powers of India by promoting internal exchange, equalizing prices in different regions, and enabling the extension of irrigation. They would promote intercourse between villages, thus further dissolving their isolation and stereotyping. Most important of all, the railways would lead to the introduction and development of modern industries. Marx agreed that the chief motive of the British in introducing the railways was to draw cheap cotton and other raw materials from India. The railways, Marx hoped, would also have the positive effect of dissolving the hereditary division of labor and the caste system. He also expected that the railways would bring to the villages knowledge of modern technology which would enable the rural artisans to modernize their traditional crafts. He thus visualized the railways initiating the process of capitalism from

\(^6\)Laxman D. Satya, traces the journey of railways in the article published in Economic Political Weekly; British Imperial Railways in Nineteenth-Century South Asia. It elaborates the purpose of empirical railways and different perspectives which look at the social and cultural change majorly focusing upon the economic and industrial development with the post effect into the capitalistic market.
below which he was at the time studying in the economic history of Britain.102’. (Marx & Engels; In Chandra B.)”

This technological intervention carries the space bias as the content could travel over spaces but it cannot break the timeframe. It reflects the cultural transition happening over spaces at a particular time as people are encountering different cultures over different places traveled by railways but again at a particular period of time. So, the depth of Innis concept here reflects the reasoning behind the cultural change came in India during colonial time with the effect of the particular technological intervention. The power of media was reflected over increasing interaction among different cultures and the mobility encouraged togetherness in respect to lived experiences. The insider view of M. K. Gandhi presents the lived experiences of people in “Third Class in Indian Railway” focusing upon the hierarchical state of living and cultural transfer through Indian Railways and also the technological advancement made people realize their pathetic life conditions under British raj. British Empire was following the industrial and market orientation but the revolution was also the result of the intervention of Railways and not only the message of media but the realization through the imposed social condition as

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7 Marx and Angels in manuscripts of Marx and Engels to Marx, June 6, 1853, and Marx to Engels, June 14, 1853, in Marx and Engels (n.d. b, 99-100, 101-04).
represented in the writings of Gandhi\textsuperscript{8}. The message through the media could reach out to distant places and this space bias made tremendous contribution in reaching out to people in the freedom struggle and that is also reflected in Indian freedom struggle movement where one can observe democracy spreading over time in the form of collective power of local public at different notes, one of those important events were revolutionaries have shown the collectivity was the Kakaori incident. At that time Hindustan Republic Association (HRA), whose leaders of different faiths, Ram Prasad Bismil and Ashfaqullah Khan were accused for that incident which was taken place to attack over the British Raj. So, many incidents related to campaigns by other revolutionaries and local people’s collectivity could be possible through Indian Railways, which is better explained in India’s Struggle for Independence (Chandra, 1987)\textsuperscript{9}.

Post-independence Indian society was in its developing and nurturing phase and the Empire was no more around but the countries development was also dependent on the development

\textsuperscript{8} The Third Class written by M. K. Gandhi and mentions about the railways as a concrete example to encourage the revolutionary insights as the technology had the significant reason to raise the voice against the British Raj.

\textsuperscript{9} Bipan Chandra, famous Historian who focuses on Modern History. He has written many book on Indian freedom struggle and modern India explains in this book about different incidence took place at the time of India’s struggle for independence from 1957 to 1947. He caters the events and the contribution of revolutionaries and how India lived all through the period of British raj and also the revolutions which arose in India over time.
plans made to work in a democratic setup. The technological development was simultaneously bringing the cultural shifts in society but political views were also intertwined into tradition and modernity to follow the development path. Singh Y. points out that the Indian development was divided into two sides where one is Gandhian idea to uphold the Indian tradition and heritage and on the other hand Nehru was inclined to see the break on religion and caste-like social barriers to development. In the democracy, it has been observed that for all the dilemmas to work under the framework which has allowed political leaders to follow the development path with the secular values to uphold Indian heritage too. The modernization has made noticeable changes in tradition and folk culture of India, as suggested by Singh Y;

“The miss-match between folk culture and textual or literary forms of culture continues to persist in India despite its rapid leaps towards modernization and globalization.

The folk cultural traditions are also rooted in the sacred and secular domains of culture. This has, however, changed rather fast during the past few decades. A major factor is the penetration of new technologies of production and communication all over India. In the spread of mass media of communication the elements of the folk culture are increasingly and selectively being integrated in the programmes of

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10Yogendra Singh has written a piece to describe the Indian Modernization and Its Contradictions: Contemporary Social Changes in India.
television, telephone and internet discourses. Some vital aspects of this culture are also being lost, mainly those which were embedded in the order of nature, ecology and manual processes of production in agriculture.\footnote{Yogendra Singh, who articulates the cultural change coming by the new media and technology in modern India He has made an explanatory articulation to suggest the contradiction between tradition and modernity in India.}

The paragraph mentioned above well reflect the cultural change taking place in modern India and with effect of technological advancement how India is developing a composite culture which reflects tradition and modernity. Yogendra Singh well rationalize the comment through the factual data that technology is making greater effect but the economic hierarchy present in society which is more than 40% people India below poverty line still live with older forms of media. So the technologies accommodate both tradition and modernity at the same time as said by Singh:

“The power of the new media of communication, the internet, the computer and television not only extend towards the new goals of modernization but also celebrate and extends the reach of religious cultural forms and values with a new power of diffusion they have acquired (Singh, 2012)”

To reflect upon modern communication technological advancement and their relation with the ‘time and space bias’ contextualization this paper takes one revolutionary media as.
subject of analyses of technological intervention which took place in India and made tremendous cultural, social and political changes.

C). Post-independent technological development was as much focused on the agricultural development. India had agriculture based economy but as Nehru had the vision to map out the development of India. The positivist perspective laid the foundation by the aeronautical sciences and the technical education. In the later phase when India noticed the technological revolution taking place and the time when Indian society was noticed as market economy because of the consumption rate of mobile phones \(^{12}\) (Kumar, 2016). Many ethnographic research also point out the telephonic communication has given birth to a revolutionary cultural change in Indian social structure which was not only limited to the upper strata of society rather that is spread over the remote areas. The study done on specifically the mobile phones usage and its impact on social change marks out the revolutionary effect but it laid the foundation of the economic sufficiency to access the media. Market survey says \(^{13}\):

"According to a market survey company, mobile user base had increased 407 million users by 2011. And interestingly it also claims that there has been a higher increase in penetration and

\(^{12}\)DuruArun Kumar studies the technological growth in India and mentions the rate of Indian users of Mobile phones, which also raises the voice towards Indian society as emerging consumer economy.

\(^{13}\)http://indiatechonline.com/juxtconsult-india-mobile-phones-study
tele-density in the rural mobile connections compared urban India.”

Here the disjuncture is needed to point out to justify the historical underpinning of this paper, as the mobile media is designed to communicate over a long distance which carries the space bias and another point to be noticed is how in friction of minutes your message reaches to the far places. So, consideration of the power to transfer your message over spaces in seconds is the major reasoning of popularizing the media but people can interact with mobile phones but cannot save the message transmitted to another place, so it creates the time bias as we cannot store the information over here. So, Innis’ conceptual soul elaborate it quiet epistemological sense which neither refutes the reasoning of cultural shift taking place nor does is accepts the idea behind the India as an emerging market economy. Not only market survey but sociologists also acknowledge this growth as Yogendra Singh mentions:

‘A remarkable growth is in evidence in the uses of information technologies, particularly use of cell phones now widespread both in villages and cities which has increased connectivity for communication for people for social, commercial and other purposes (Singh Y;1992)

A reflection from the sociological enquiry based on structural changes came with the encounter of cell phones as a technological advancement in India suggests that India has
delimit its structural boundaries in multiple ways as the changes in lifestyle suggests:

“The traditional structures and functions of institutions such as caste, village community and occupational profiles have undergone basic changes not only in cities but also in villages across India. Most castes now no longer pursue the traditional ascribed occupations for which they were known (Singh K. S. 1992)”

Apart from social change in structural hierarchies many have also catered the changing processes of political and economic sphere which has turned the society into a new cultural zone. It says that now mobile phones are a core need of society as reflected in studies which suggest that how Indian political system doing the electoral politics through mobile phones, which is leading India into a drastic change. The idea is to look into the usage and power of technology as it is reaching out to people, it is making noticeable changes. This consumption is not limited to the city rather the cases in villages are more critical as the day-to-day conversation are done on the mobile phones in those areas which consume more money (Tenhunen, 2008). It is fulfilling the needs of society to spread the voices or messages over space as it has occupied with the space bias nature and hence making different kind of

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14 Robin Jeffrey and AssaDoron’s study: Mobile-izing: Democracy, Organization and India's First "Mass Mobile Phone" Elections.
15 The article written on Mobile Technology in the Village: ICTs, Culture, and Social Logistics in India by SirpaTenhunen.
changes in society. It is observed all over India and the data of market based studies also supports it the increasing usage of mobile phones making people addictive to it.

D). At last, after the mobile phone revolution in India after Independence, it is visible that time and space bias in media necessarily has the connection in a historical sense. The cultural trends which are visible and influenced by media are not limited to the political or economic relation rather the nature of media is dependent on the time and space bias it creates with effect over the cultural and social context. Lastly, this paper includes the contemporary trend set by newly emerged mode of communication by transferring data popularly known as ‘Digital technology’. Digital is neither technology nor media but a mode of communication with which we interact and it makes it faster to reach out to people. In its broadest sense, technology also includes the skills or procedures necessary to make and use those tools (Henslin, 1998). The type of technology a group has sets framework for its non-material culture. Technology even influences the way people think and how they relate to one another (Stromquist, 2005). So these renderings from different research made the way to look at technology which is making the change in society by providing certain skills and digital is one of those mediums. The digital form of communication and message transfer is most recent in India which is taking over all the industries and consumption of

http://news.bbc.co.uk/2/hi/talking_point/3340653.stm
digital media has increased because it is again easily available but it has the capacity to do multi-tasking the transfer of audio-video-graphics and so on and so forth…This medium makes it difficult to implement the time and space concept. So over space, the message can reach and over time it can be stored. This makes it important to study that what kind of cultural shift it can evolve in the Indian Society. It is nowhere any easy mode of communication as it is pronounced by its nature. The easy taking makes the impact more drastic. To analyze this influential Digital medium further one needs to look at certain contexts which perhaps goes beyond the historical trace but it might come as an effect of historical events. So the emerging trend as marked by social scientists, educationists, and psychologists as they are catering the distinction created among society as ‘the Digital immigrant and the Digital Natives’17. These are upcoming categories which are suppository crossing over Caste and religion barriers as was mentioned in Nehru’s vision of India’s development. The rate of consuming the digital media is making a change in the neurobiology of human. So, children who are growing with the schema of digital their historicity will make them as digital natives and who are consuming through adaptation will create a different class of ‘Digital Immigrant’. In Indian context when the consumerist economy is encountering the digitalization of society the drastic

17 Terms are coined by educationist Marc Prenky and later on adopted by many researchers. Topscott's argument can also be analyzed in the David Buckingham's edited book.
shift would be observed and over time it may change the structure of society which is again reflected by the nature of media which is beyond time and space bias and hence Digital medium is full of uncertainty regarding the Indian Digital India Future!

CONCLUSION

This paper starts with the understanding of Harold Innis in a particular context then it moves into a kind of implementation of the concept of ‘Bias of communication’, so to understand that how media and communication in its nature with an amount of power creates a social change. It is largely making the elaboration of that analyses which Harold Innis started in the context of Empire. This paper comes out with an interesting observation when the ‘time and space bias' concept gets lost and fails to map out the power of digital mode of communication as it goes beyond to the assumption of Innis. The message is stored as well transmitted to all over the globe. How the technology is creating a tremendous shift with an effect of new mode of communication. But the new society cannot be mapped out it is again a very important focus of this paper which gives the space to broaden the horizons of history and to find out the reasoning of this changing society and its flow.

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