CHAPTER-1

Introduction
1.1 About the study:

In many ways, there has been a very broad change in last 20 years. In India, however we are witnessing a revolution in computer and communication technology leading to the emergence of multimedia. Multimedia technology has enormous potential. The application of multimedia provides much better interfaces between user and information. By use of still or moving image integrated with text, audio and animation information can be provided in forms which are more easily interpretable by user. Multimedia is set to pervade every corner of our lives. Multimedia offers a much superior and more efficient means for smooth communication of information. It is invading many sectors like entertainment, healthcare, security, safety education, business and environment.

With the rest of world, India is gradually leveraging ICT (Information Communication Technology) tools and multimedia platforms to facilitate its developmental activities, and awareness programme.

In India, it has been a decade of multimedia technology and ICT (Information Communication Technology). Various programmes and activities based on ICT (Information Communication Technology) and multimedia are happening in different part of the country. For instance DISNIC, AGRIS smart village Smart Island Programme, “Cultural Atlas of India” A programme by ministry of culture and UNESCO, ‘Kalasampda’
multimedia digital library by IGNCA, ICT (Information Communication Technology) in school by SSA and IETS etc.

In spite of Government and NGOs participation corporate sector and entertainment industries have been utilizing multimedia technology predominantly for their day to day work.

Various impact studies of multimedia have been done in the developed and developing countries by the business research & government organization like:

Similarly, people of Indian society, direct or indirectly become the part of their network. Looking to this fact, it is observed that, how multimedia technology influence their lives. How they react with technology? What are the major effects of this new technology? Is the multimedia technology good for them? And so on many questions arise. Impact of multimedia on higher education? Impact of multimedia on health sector? Impact of multimedia on entertainment sector? Impact of multimedia on economy?

Over the last decade, counting of multimedia users in Indian society has been increased tremendously. To asses the impact of multimedia on Indian society, this study has been conduced. How multimedia is playing a vital role in the society.
1.2 Objectives of the Study:

The Prime focus of the study is to assess the impact of multimedia on Indian society. However, "Impact" signifies the social, behavioral, environmental, and cultural effects on the people. The study attempts to find out positive and negative impact of multimedia on Indian society, through examine the attitude change of its users.

- to gain the information about various forms and trends of multimedia technology emerging in India.

- to assess the impact of multimedia on social values.

- to assess the impact of multimedia on cultural values.

- to assess the impact of multimedia technology on higher education.

- to assess the impact of multimedia on social awareness.

- to assess the impact of multimedia on healthcare facilities.

- to assess the impact of multimedia on crime prevention and control.

- to assess the impact of multimedia on rural & urban life style.

- to assess the impact of multimedia on entertainment sector.

- to assess the impact of multimedia on environmental issues.
1.3 Hypothesis

Prime and significant points of the Hypothesis are as follows:

- multimedia has been playing a central role in enabling the growth of 'knowledge society' in India.
- multimedia technology is very efficient tool as far as social and cultural awareness is concern.
- negative impact of multimedia can be observed on social and cultural values.
- multimedia technology has affected social structure of Indian society.
- multimedia technology is useful in preservation of cultural heritage.
- multimedia technology provides a support for aesthetic aptitude development among the users.
- multimedia technology can be utilized for training of performing arts like dance, music and theatre.
- multimedia technology is wonderful and interesting tool for higher and professional education.
- multimedia technology is helpful in health awareness campaign.
- multimedia technology has been misusing by the Criminals.
- multimedia technology is a step towards the quality life.
1.4 Universe of the Study:

Term 'Universe' refers to the total of items about which information is desired. In the context, Madhya Pradesh state of India is selected for the present study. Out of 48 districts of M.P. three Districts Sagar, Bhopal, Indore) 7% of the Universe have been further selected for the collection of data. These three districts are again divided in to two zones viz. Zone I - District H.Q., Zone II - other city or town belongs to rural, sub urban population.

These three districts (Sagar, Bhopal, Indore) have been selected through random sampling method. With, the potential categories, development, life style and numbers of multimedia users, these three districts have their own peculiarities.

**Indore**
- Indore is developed, largest infrastructure wise rich district and is the commercial capital of M.P.

**Bhopal**
- Bhopal is developed as the capital of M.P.

**Sagar**
- Sagar is relatively backward district of M.P.

1.5 Methods of Research:

Present scene, with the growth of multidirectional development, planning methods of evaluation and impact assessment or measurement come to occupy a significant place in the academics. In the context of some of the contemporary devolvement in social science research in India the trend of interdisciplinary approach has been started.

To measure the impact of multimedia on Indian society, study uses a self designed scale based on Likert scale. Though the nature of
the study is mainly exploratory but some other way it can be characterized as evolutionary.

Perhaps the study is interdisciplinary in nature. It covers broadly three disciplines - mass communication, computer science and sociology. Though the multimedia is mainly a significant portion of computer science but here in this context, multimedia has been considered as device or major tool for communication. In the process of deciding the appropriate and suitable method for study the major decisions of research have been taken in reference to the following aspects -

- Purpose and scope of the study
- Main source of data
- Place or area of study
- Techniques of data collection and analysis
- Specific nature of the study
- Type of sampling

Basically, an impact study framed according to the method of qualitative research.

**Mainly study included four significant phases of research:-**

**Phase-1** Understanding verifying the dimension and scope of impact.

**Phase-2** Formulating, suitable methodology for the impact assessment of multimedia on Indian society.

**Phases-3** Pre-testing of tool, pilot study and systematic application of research methods with refinement and correction through various case studies and relevant research.

**Phase-4** Report of facts analysis and interpretations of data for final results.
1.6 Multimedia: Scope and Application

The term 'multimedia' is formed by the combination of two words 'multi' and 'media' 'multi' refers to many i.e. at least two. Media is the plural form of medium. Medium refers to basic information type like text, graphics, audio, video animation etc.

Tay Vaughan in his book Multimedia Making it work published by Tata Megrawhill describes. “Multimedia is any combination of text, graphic, art, sound animation and video. When it allow an end user-the user of multimedia project to control what and when elements are delivered. It is interactive multimedia when provide a structure of linked element which the user can navigate interactive multimedia becomes hypermedia.”¹

An other definition of multimedia on website. Specifically, and technically define “the word system that support the interactive us of text, audio, stimulate, video and graphics each of there element must be converted in some way from analog form to digital form before they can be used in a computer application. Thus the distinction of multimedia is convergence of previously diverse system².”

Definition of multimedia which provides more technical base i.e. “Multimedia information system makes use of many different ways of communication (or media). There can include text recorded based data numeric data, graphics, image, voice and video. The term multimedia is generally used however to describe more sophisticated systems particularly those that support moving image and audio³.”
The study also referred the definition mentioned by Wikipedia.

"Latin word ‘multum’ and medium means multimedia is media that uses multiple forms information content and information processing (e.g. text, audio graphics, animation, video interactivity) to inform or entertain the (user) audience. The term rich-media is synonymous for interactive multimedia."
Other term multimedia refers to presentations that are assembled/configurated inside the computer and played by it on a monitor or projection screen (Internal –Software based).

Fig. 2 : Multimedia Applications

IT, ICT and Multimedia :

Social scientists speak of the dawn of Anewera the “Information Age”. We are in the information age, innovative ideas and the clever use of information makes society.

Information technology is a very popular word now days. N.R.V. Prabhu explains “the technology-be it radio. TV, satellite transmission, computers, CD ROMs networks-that helps, collected, sort, analyze and disseminate information comes, under the ambit of information technology (IT)⁵".
The present state of information technology is set to change a variety of significant aspect of human life, namely business, communication trade, manufacturing, service, education research art culture entertainment and security.

According to Cambridge Encyclopedia "A term commonly used to cover the range of technologies relevant to the transfer of information, in particular to computers, digital electronics, and telecommunication".

The new trends are emerging in the arena of information communication technology the most common trend is convergence of technology i.e. multimedia technology.

For last decade, the utilization of multimedia technology in ICT (Information Communication Technology) has been growing. Delivery of information through multimedia technology now becomes a fashion as well as need.

Multimedia has changed the way of information gathering, repackaging and distributing the user with its sound and visual capabilities.

Multimedia no doubt is new information technology product. Multimedia is redefining the communication system that forms a significant part of the information of our society.

**History and development of Multimedia:**

The evolution of multimedia is a story of the emergence and convergence of various concepts, theories inventions and technologies.
From persistence of vision to discovery of cinema and invention of video audio to evolution of computer. All these historical events are responsible for the birth of multimedia.

Chronological description of the history of multimedia is given below:

Table No. 1.1
History of Multimedia from 1455 to 1879

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1455</td>
<td>Printing Press Gutenberg and Claxton, movable type printing.</td>
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<tr>
<td>1780</td>
<td>Franklin discovers electricity</td>
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<tr>
<td>1822</td>
<td>Charles Babbage designs the Difference Engine</td>
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<tr>
<td>1833</td>
<td>Babbage designs Analytical Machine often considered to be the first general purpose computer.</td>
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<tr>
<td>1837</td>
<td>Telegraph receiver and transmitter</td>
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<td>1854</td>
<td>George Boole: develops binary mathematical language of 1's and 0's (Boolean Algebra)</td>
</tr>
<tr>
<td>1858</td>
<td>Transatlantic cable laid</td>
</tr>
<tr>
<td>1867</td>
<td>Remington Manual Typewriter</td>
</tr>
<tr>
<td>1876</td>
<td>Telephone</td>
</tr>
<tr>
<td>1879</td>
<td>Granted a phonograph patent</td>
</tr>
</tbody>
</table>

Source: The history and “Development of Multimedia”, "History of Multimedia Technology", 1997, Swinburne University of Technology TAFE Division.

Table No. 1.2

History of Multimedia from 1886 to 1948

11. 1886 - Burroughs: First commercially successful adding machine.

12. 1888 - Mood Music for Film: Music scores sent along for organ accompaniment

13. 1890 - Tabulating Machine for the U.S. Gov. Census using punch cards. The tabulating machine later became IBM.

14. 1920 - Commercial radio KDKA Pittsburgh

15. 1925 - Electronically recorded sound AT&T's Bell labs allow record of whole symphonies

16. 1927 - "Talkies": talkies film using optical sound recording.


18. 1932 - Conrad Zuse first calculator

19. 1933 - Magnetic tape BASF introduces magnetic recoding

20. 1936 - Dudley Vocoder- voice coder

21. 1939 - "Turing's Machine" defined as capable of computing any calculable function

22. 1941 - John Atanasoff and Clifford Berry design a prototype of the ABC computer (the first automated digital computer)

23. 1943 - "COLOSSUS" built for the British military from Alan Turing's Design

24. 1945 - Zuse- Z3 First machine to work on a binary system rather than decimal system.

25. 1946 - "As we may think" in the Atlantic Monthly

26. 1948 - ENIAC Electronic Numerator Integrator and Calculator the first successful high speed digital computer. However, it used the same concepts that Atanasoff and Berry used to build the ABC computer.

27. 1948 - Shockley, Bradeen and Brattain develop the transistor. More reliable and cheaper to run than vacuum tubes. Open reel tape recorder by Magnecord.
Table No. 1.3
History of Multimedia from 1951 to 1973

27. 1951  - UNIVAC computer used magnetic tape for buffer memory.
          - IBM 701: First electronic stored computer that used vacuum tubes, RAM, punch cards and was the size of a piano.
28. 1952  - Electric typewriter
29. 1953  - Transistor radio: first communication use of transistor radio develop 1947@ Bell labs
30. 1954  - First Transatlantic telephone
31. 1956  - Sputnik launched
            - CRAY: Builds the CDC 1604 for Control Data Corporation. The first fully transistorized supercomputer. Integrated Circuit: Solves the problems of speed, size and wiring.
33. 1958  - Second generation computer introduced by IBM. Used transistors instead of vacuum tubes.
            - Removable disks Paul Baran sees a communications networks different than the traditional point to point links. He envisioned a "fishnet network"
34. 1959  - CAD (Computer Aided Design) Sketchpad uses the first light pen. Philips first compact audio cassette.
            - "Understanding Media" Postulates the global village. Third generation of computer included the photo printing of conductive circuit boards to eliminate writing.
35. 1960  - Xanadu hypertext project
36. 1963  - Development of hypertext editing system. Dolby labs produces Dolby reduction for prerecorded
37. 1964  - Fourth generation computer by IBM uses chips to reduce size and cost.
38. 1965  - Intel 4004 chip devolved by Hoff. Computer can now be owned by individuals.
39. 1969  - Metcalf outline ideas for Ethernet. Kahn & Cert present ideas structure of Internet
<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>43</td>
<td>1974</td>
<td>Intel 8080 microprocessor which was to be used in many PC's.</td>
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<tr>
<td>44</td>
<td>1975</td>
<td>Microsoft is founded by Bill Gates. DND takes over ARPANI.</td>
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<tr>
<td>45</td>
<td>1977</td>
<td>Apple was founded by Steven Jobs and Steve Wozniak. Email provided to 100 res.</td>
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<tr>
<td>46</td>
<td>1978</td>
<td>First commercially available phone</td>
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<tr>
<td>47</td>
<td>1979</td>
<td>VisiCalc: the first spreadsheet</td>
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<tr>
<td>48</td>
<td>1980</td>
<td>Wordstar: word processing package is released.</td>
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<tr>
<td>50</td>
<td>1982</td>
<td>The MS-DOS, or Microsoft Disk Operating System.</td>
</tr>
<tr>
<td>51</td>
<td>1983</td>
<td>Adam Osborne completed the first portable compute. Apollo Computer unveiled first work station.</td>
</tr>
<tr>
<td>52</td>
<td>1984</td>
<td>Lotus 1-2-3, software writes directly into the video system of the IBM PC. First digital Computer unveiled first work station.</td>
</tr>
<tr>
<td>54</td>
<td>1986</td>
<td>W. Gibson in Necromancer coins the term &quot;Cyberspace&quot;. Apple Computer introduces the Macintosh with the first mouse driven GUI (Graphical User Interface). 31.2-inch &quot;microfloppy&quot; diskette DNS: domain name server Introduced voicemail developed. Desktop publishing Aldus Page maker for the Macintosh. NSFNET: linking five university super computer centers. (550 mg) CD-ROMs evolve from CD's on which music recorded.</td>
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<tr>
<td>55</td>
<td>1987</td>
<td>Optical transistor patented, a component central to digital optical computing.</td>
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<tr>
<td>Year</td>
<td>Event</td>
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<td>----------------------------------------------------------------------</td>
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<tr>
<td>1988</td>
<td>Robert Morris' worm flooded the ARPANET</td>
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<tr>
<td>1989</td>
<td>Handwriting reorganization is introduced by grid with a touch sensitive pad on lap top computers. Battery powered, fully functional notebook computer. Corporation for research and Education Networking (CREN) is formed by merging CSNET into BITNET.</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>IBM, Tandy AT &amp; T and others announce the hardware specifications for multimedia platforms ARCHIE. IBM, Tandy AT &amp; T and others announce the hardware specifications for multimedia platforms. The birth of the World Wide web Tim Berners-Lee develops HTML (Hype Transmitter Markup Language)</td>
<td></td>
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<tr>
<td>1991</td>
<td>GOPHER PGP encryption released by Phillip Zimmerman. National Science Fundamental lifts ban on commerce on to Internet.</td>
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<tr>
<td>1993</td>
<td>Mosaic developed by M. Andreessen Internet.</td>
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<tr>
<td>1994</td>
<td>Inter net goes interactive; shopping, banking live concerts, and radio broadcasting spamming. Private ISP becomes big business</td>
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<tr>
<td>1995</td>
<td>Netscape goes public.</td>
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</tbody>
</table>

**Source:** The history and "Development of Multimedia", "History of Multimedia Technology", 1997, Swinburne University of Technology TAFE Division.

Application and Products of Multimedia:

Recent developments in computing and communication technologies are at the forefront of the multimedia revolution. The multimedia revolution has become the latest phenomenon, changing definitions and everyday style of work and life.

As multimedia technology has moved to the mainstream, applications in many field have appeared entertainment, home shopping, education, healthcare and engineering are a training etc. are the few examples.

1. Entertainment Sector:

The use of interactive multimedia for entertainment has been growing since 1990. Sophisticated games movie with special effects. Three-D animation based programme and digital cinema, video on demand, are the few destinations of multimedia.

2. Home Shopping:

Today, Home shopping is become common through interactive TV (multimedia) and internet. Video-telephony is also used for home shopping. Dialing their no & using credit cards, it is easy to buy or sell many consumer products.

In another type of home shopping, touch screen Kiosks have entered the business of residential real estate agent. Home vision allow user to browse a photo data base of Homes, seeing different views of home.
3. **Multimedia communication for Health Care:**

Since the multimedia technology permits visual data to be easily viewed shared and processed. Health care industry has been started to utilize this feature of multimedia for medical communication.

Like, X-Rays, CT Scan, MRI Endoscopy, Ultrasound, Iconography and Eye-machine are now a days utilizing the emerging techniques of multimedia.

**Geographic information System:**

GIS are available to provide on line support and information for the facilities such as the location of building, roads, power lines and Railway tracks. With the addition of multimedia information visual and audio data can be associated with land marks and other points of interest.

**Education :**

Application of multimedia in Higher Education and School Education has been very common in developed countries like USA Canada & UK. It is now taking pace in India like third world country. Multimedia has the power to engage, to explain and to teach because it contains all features of communication, picture, sound, video, animation and text.

Recently in India, simulation of scientific topics e-content programme on internet, interactive CD Rome for children has been produced and marketed every where Govt. of India, also run a scheme like ICT at school, which contains multimedia material for teaching and learning.
Multimedia at Home:

Domestic use of computer has been sustainably increased in India. Today, multimedia computer system is common choice of home consumer. A computer with, CD and DVD drive and other multimedia features are very common now a days. Even the people of rural area, use DVD player, CD player game platform at home.

Multimedia in Business:

The potential of multimedia has been recognized by business and government as well. The most common business application of multimedia are presentations, training, marketing advertising product demonstrations, data bases catalogues and network communications.

For the training of personnel, multimedia simulation has been used by the companies.

Multimedia in Public Places:

The power of multimedia has been utilized by the government agencies to inform and to aware the public. Multimedia Kiosks offer a service to communicate with citizens. They can be easily installed in hotels, theaters, shopping malls, grocery stores, public park and railway stations, to provide information and help. Safety cautions, traffic rules, social message and logistic information (Hotel, airline, train schedule) etc can also be displayed by the Multimedia Kiosks.
Multimedia in the Information Highway:

In India, rapid developments in ICT and expansion of telecommunication networks has been opened ample opportunities for multimedia based products. Mobile/cell phone manufactures now a days has been marketing cell phones. With caption like 'multimedia features phones', 'multimedia download', multimedia delivery (Blue tooth technology) etc. Presently, still camera, video camera, MP-3 player GRRS, and many more features are the most common in cell phones.

Some of the most popular multimedia products have been used by Indian society is listed below.

1. Multimedia computer system
2. Mobile phones with multimedia features.
4. Multimedia display advertising board
5. Multimedia computer games (online & offline).
6. Digital cinema
7. Virtual reality show
8. Video on demand
9. Digital video and still camera
10. Digital video on CD and DVD
11. Digital audio equipment (I-pod)
12. Multimedia simulations
13. E-content programme
15. Digital projection system (satellite movie show)
Multimedia Computer System:

"A multimedia computer system is a powerful PC with graphics processor, sound card, video capture card, CD Rom drive and a set of sound blasters such a system of multimedia computer allows users to access the required information in the form of text as well graphics and sound. The document in the multimedia format occupy larger storage space hence, they are stored in either in high capacity hard discs or in CD Rom. The files are organized in Hyper text/Hyper media environment".

Hardware components of multimedia computer system

The general components of multimedia computer are given below.

1. CD drive
2. Audio card (sound)
3. Graphics accelerator card
4. MIDI connectors
5. Video card
6. Speakers
7. Microphone

Peripheral attachments
(a) Digital VCR/Analog VCR
(b) Digital still camera
(c) 3CCD video camera
(d) scanner
(e) CD writer/DVD writers.
(f) Head phones.
(g) Monitor
(h) Multimedia keyboard.
CD Drives and CD Writers/DVD Writer:

An essential component of multimedia, use for data transfer, data display and data storage. Recently, DVDs are more popular then CD because of larger storage space, and better quality of audio video.

Sound Card:

The function of sound card is to capture sound, convert sound in to digital format, and sometime modulate sounds of various instruments.

MIDI:

MIDI stand for Musical Instrument Digital Interface, all sound cards used in MIDI to communicate with the synthesizes. A MIDI file contains information about notes such as when to play, when to turn it on and off.

Speaker:

Speakers are the output part of multimedia computer system. The main function of speaker to reproduce sound with quality.

Video Card:

Digital video capture card is basic component of MM computer the function of videos card is to capture video (digital as well as analog) convert in to suitable video files. Video files occupy large storage space hence the management of video files is major task in multimedia communication.
**Graphic Accelerator Card:**

There are basically video display boards. Better resolutions, more colours and higher speed of display can be obtained by these display board. These cards are especially useful while playing animation.

**Monitors:**

For multimedia computer, coloured monitors are recommended. High resolution and better scanning speed is the key features of these monitors.

**Scanners:**

Scanners are most widely used for image capture, in multimedia communication system.

**Digital Camera:**

Still image and moving images are the significant element of multimedia programme. For capturing these images, Digital video and still cameras are recommended.

**Keyboard:**

Keyboard of multimedia computer is known as multimedia keyboard because it has some unique features. Such as volume control, play, pause, reverse, forward etc.

The software requirements for authoring multimedia may include interactive authoring with animation, sound, video, graphical database for multimedia objects, screen captures, page layout for
documentation, graphic creations and manipulation programme, presentation, graphic manipulation, hypermedia authoring programme, sound creation and editing programme etc.

**Commonly used Softwares in Multimedia Computer:**

As per the guidelines of some standard computer brand following soft wares are used in multimedia computer (IMB, HP, Microsoft).

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<tbody>
<tr>
<td>1.</td>
<td>Text -</td>
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<tr>
<td>2.</td>
<td>Sound -</td>
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<tr>
<td>3.</td>
<td>Graphics -</td>
</tr>
<tr>
<td>4.</td>
<td>Image -</td>
</tr>
<tr>
<td>5.</td>
<td>Video -</td>
</tr>
<tr>
<td>6.</td>
<td>Animation -</td>
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<tbody>
<tr>
<td></td>
<td>MS Office, MS Word, PP, Excel,</td>
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<tr>
<td></td>
<td>Sound force, Audition</td>
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<tr>
<td></td>
<td>Flash, Macromedia flash, photo shop</td>
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<tr>
<td></td>
<td>Adobe photo shop, Image ready</td>
</tr>
<tr>
<td></td>
<td>Adobe Premier, Movie, Pinnacle, DPS Velocity</td>
</tr>
<tr>
<td></td>
<td>Flash, Director, Authorware, 3D Studio Maya, 3D Max, Soft Image Swiss max etc.</td>
</tr>
</tbody>
</table>

These authoring systems provide various facilities combining the functions of word processing, publishing, graphic, animation, special effects, audio, video support, interactive branching and system navigation.

**Trends of Multimedia:**

The use of multimedia is increasing rapidly in business, entertainment and education.

New trends have been emerging due to co-existence and convergence of new media and technologies i.e. state-of-art technology.
Information technology, telecommunication and broadcasting now influence each other.

Impact of I.T. computer (internet and multimedia) on satellite television can clearly be seen for example if you carefully watch the TV news channel. It resembles like a homepage of website or window of computer. It contains the audio, video with dynamic text, animation variety of information at a glance.

Though television is not a pure multimedia device because it does not allow us to exchange information in interactive manner. But some features of multimedia have been present in T.V. also. In fact, popular trends of multimedia technology can be witnessed in every field, another example if some one surf on internet popular website one can easily find soothing video clips & pleasant audio on home page. This is the impact of television broadcasting on internet. Various activities of academicians and business corporate, such as research paper presentation business presentations and reports etc has been influenced by multimedia technology. For example, presently, research paper includes, dynamic text instead off static, more use of graphics, (2D-animation, video clips and still images). Ahead of power point presentation now people looking forward to use multimedia software like Flash Director, Authorware etc. for their presentation.

Advertising industry, now has been utilizing full advantages and power of multimedia technology. Hoarding display board, indicators
and electronic screens are being full of dynamic text, animated material and video clips.

Recently, multimedia technology has also been utilized by the mobile phone manufacture and network providers. In the market, we can easily observed selling caption like “Multimedia feature mobile”. Multimedia features exactly mean MP-3 player, digital camera and sound recorder (GPRS FM Radio, for internet facilities to download, and extra memory card storage) etc. Particularly, Telecom sector has become the right place for multimedia communication and its innovations.

One of the most remarkable fields for multimedia is electronic and game industry; it is believed that the PC, games are best representative of multimedia technology, because games contain all features of multimedia. (Text, video, animation, sound, graphics and sufficient amount of interactivity) millions of PC games are now available in Indian market and moreover new and newer game has been introduced every day. Online game on computer through internet has also been picking a pace in Indian society. However, in India Multimedia technology has come in to pace after the phenomenon of globalization. For the rapid expansion of new technology and new media in the third world, the global economics & Indian Market growth are the Key driving forces.

Multimedia Home theatre, Interactive TV, e-mail with Image and sound voice mail, health diagnosis and monitoring device GSS, GPS,
car tracker systems microchip based 'smart cards' electronics notepad with voice and handwriting recognition Interactive games and curriculum based multimedia solutions and Mobile Phone with multimedia attraction (coloured screen camera, MP-3 Player etc.). Today multimedia technology based products has become popular among the Indian Society. But multimedia System based network has its own limitations and problems.

- Streaming video and multimedia content delivery is very time consuming due to low band width available on Internet
- Non availability of hardware in Rural India
- Lack of skill and computer literacy among the rural masses of India
- Maintenance of hardware is big problem in distant villages of India
- Lack or inconsistent power supply is the most unwanted hurdle in connectivity
- Multimedia hardware and software are costly and still beyond the reach of General public.

Indian Society

"Development in human society is a many-sided process. At the level of individual it implies increased skill and capacity, greater freedom, creativity, self-discipline, responsibility and material well-being. Some of these are virtually moral categories............however, achievement of any one of these aspect of personal development is very much tied in with the state of the society as a whole."
Societies represent the most comprehensive and complex of social structure in today's world. The essence of a society is people, individual engaged in a complex set of interrelated activities.

Sociologists see a society as a relatively independent. Self-perpetuating group of people who occupy the same territory and participate in a common culture.

About the society scholars have their own views some of them are follows;

Max Weber explains- Social action- behavior that involves the intervention of through process- is the heart of sociology. He concluded that a critical aspect of the sociologist enterprise is the study of the intentions, values, beliefs and attitude that underlie our behavior. Weber believed sociologists can derive an understanding of social action in a manner that is unavailable to chemists and physicists. In investigation human behavior, sociologists are not limited to such objective criteria as weight and temperature; they can examine the "meanings" we bring to our interactions with one another.

Herbert Spencer- “viewed society as similar to the living body. Based on this organic analogy, Spencer depicted society as a system, a whole made up of interrelated parts. Just as the human body is made up of organs like the kidneys, lungs and heart, so society is made up of institutions like the family, religion, education, the state and the economy. Spencer’s approach parallels that of biologists who portray an organism in terms of its structures and the functional contribution these structures make to its survival99”.

Department of Sociology & Social Work, Dr. H.S. Gour University, Sagar (M.P.)
Culture refer to the social heritage of a people-the leaned patterns for thinking, feeling and acting that characterize a population or society, including the expression of these patterns in material things. Culture is composed of nonmaterial culture-abstract creations and institutional arrangements-and material culture-physical artifacts or objects like clay pots, computers, football helmets, curtains, bathtubs, coins and altars. Put another way, culture provides a kind of blueprint or map for relating to others.

Sociologists illuminate the human experience. It invites us to examine aspects of the social environment that we often ignore, neglect, or take for granted. By studying sociology, we can achieve a better grasp of how our society is organized.

Indian Society is ancient and it is very complex. Contemporary India Live with several different levels and trends of social evolution.

India the land of Religions - most of the major religions of the world Hinduism Islam, Christianity Buddhism are flourished here, and in addition, there is a bewildering variety of cults and sects with different orientations in belief and Ritual. On the other side modern academic, bureaucratic, Industrial and scientific clients integral part of the Indian society.

It is most amazing and unique characteristic that Indian society has lived with all dimensions of time, in India past present and future living together in the process of its evolution. Indian society has
acquired a 'composite' culture characterized by stable patterns of realism.

Extremely complex and very old, Indian society is always recognized for its spiritual antique and cultural heritage. Comprehending the complexities of Indian social structure has challenged scholars and other social scientist over many centuries. The ethnic and linguistic diversity of Indian civilization is the unique characteristic.

Vast numbers of different regional, social and economic groups, each with different cultural practices are co exists. Huge urban-rural differences can be observed in Indian society.

Gender distinctions are pronounced [discrimination] especially in village the role and expected behavior of man and women is quite different. Most of the major religions of the world, Hinduism, Islam, Christianity, Buddhism are found here. In addition to that the people of India belong to thousands of castes and caste like groups.

Impact:

The word “impact” means strong effect or impression, it is mentioned in the Oxford dictionary. Social, behavioral, economic, educational and environmental. To accelerate the social, behavioral, economic, political, educational and environmental change in the society, both positively and negatively".11
For deciding the impact indicators the present study referred a document prepared by International association of impact assessment, the brief description of document as follows.

**Social Impact Assessment:**

"Includes the process of analysis monitoring and managing the intended and unintended consequence, both positive and negative of planed interventions (policies, programs, and plans project) and any social change process invoked by those interventions. Its primary purpose is to about a more sustainable and equitable biophysical and human environment"\textsuperscript{12}.

However, awareness of the differential distribution of impact among different group in society, and particular the impact burden experienced by vulnerable groups in the community should be of prime concern.

**What are social impacts?**

"SIA is much more that the prediction steps within an environment assessment framework. A limited view of SIA create demarcations problems about what are the social impact to be identified by SIA, versus what is considered by related field such as health impact assessment, cultural impact assessment, heritage impact assessment or gender impact assessment. The SIA community of practitioners considers that all issue that people, directly or indirectly, are social impact assessment"\textsuperscript{13}.

A convenient way of conceptualising social impact is as change to one or more of the following:
People’s way of life— that is, how they live, works, play and interact with one another on a day to day basis;

Their culture— that is, their shared belief, customs, value and language or dialect;

Their community—its cohesion, stability, character, service and facilities;

Their political system— the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resource provided for this purpose;

Their environment— the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to the adequacy of sanitation, their physical safety, and their access to and control over resource;

Their health and wellbeing— health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity;

Their personal and property right— particularly whether people are economically affected, or experiment personal disadvantage which may include a violation of their civil liberties;

Their fears and aspirations— their perceptions about the safety, their fears about the future of their community, and their aspirations for their future of their children.

Source - IAIA social impact Assessment International principles.
1.7 **Multimedia in India:**

Today multimedia technology based products have become popular among the Indian users. Specially teenage and adult are very impressed by these products. Demand of multimedia featured (camera mp-3 etc) mobile web based multimedia content (image, graphic, video) multimedia simulation PC games, (online/off line) CD Rome, DVD, VR machines, electronic etc. have been increased in the past years. It is observed that the people of every age group, status and domain are eager to use new and new multimedia based gazette.

The question of "Digital divide" is also arise specially when we are discussing about multimedia in India contemporary Indian society belong to various income groups as well as several levels and trends of social and political awareness.

People of urban, sub urban, then rural and remote like wise digitally rich people digitally poor and digital gap, these terms are now a day common to describe the status of digital divide in the society.

Beside the scope and power of expression multimedia technology has its own limitation. Primary knowledge of computer operation and English language, availability of software and hardware, electric power etc. are the basic requirement of multimedia technology.

In Indian scenario where 74% population is coming from rural area, multimedia technology has been facing many limitations and problems.
1.8 Multimedia in M.P.

Madhya Pradesh is always categorized as backward state of India, now this statement is chaining, people recognized it as rapidly developing state of India. Now M.P. is included in the list of fastest growing ICT (Information Communication Technology) state of India, development in, telecommunication network, infrastructure, highway, rail, air services during last decade has been remarkable.

Recently, Planning commission of India has been appreciated the M.P. Govt. of rapid implementation of various Govt. schemes related to health, infrastructure and social welfare.

People of M.P. Govt. organization business houses even NGOs, has been utilizing Multimedia technology for various kind of work Many multimedia products like computer laptop multimedia feature mobile CD, DVD, Video games are become popular in the society.

For example in Higher Education, E-Governness, Entertainment, telecommunication Programme like “ICT (Information Communication Technology) in school” e-chopal etc. are in the form interactive CD & DVD (multimedia products) are common and used by the public.

New technology particularly ICT (Information Communication Technology) is a vital feature of the move to a “knowledge society”. The new trends are emerging in the arena of ICT (Information Communication Technology). The most common trend is convergence of technologies i.e. multimedia. All sectors are desperate to adopt multimedia solutions for their and user/costumer/student.
It is observed that “the information system rapidly occupies by the multimedia system because of its powerful impact, completeness and effective communication. "Studies indicate that if you are stimulate with audio will have about 20% retention rate, audio visual up to 30% and in interactive multimedia simulation/presentation where you are really involved the retention rate is as high as 60%"\textsuperscript{14}. Multimedia simulation and products have been utilized by the developed countries in the various sectors specially in the field of military, medical research and higher education since 1988.

1.9 Review of Literature:

For any research assignment review of pertinent studies is a must, for it develops and insight into the problem to the investigated. Thus provides an opportunity to know what others have done and what remains to be done in the area of own interest.

The review of literature provides the fundamental basis for the hypothesis. The rationale for method, sample, tools and statistical technique are obtained from the review of literature. The result and finding are discussed at length with the help of previous studies, in the field.

The findings of earlier studies may support his formulation or contradict. The review of the literature can be utilized from selecting a problem up to reporting the study.

"Research also takes the advantages of the knowledge, which has accumulated in the past as a result of constant human endeavor."
Chapter-1

Introduction

It can never be under taken in isolation of the work that has already been done on the problems, which are directly or indirectly related to a study proposed by a research^15^.

The task of Review of Literature is highly sophisticated, creative but some time tedious also.

Various impact studies of multimedia have been done in the developed and developing countries by the business houses, research institutions and government agencies. But in Indian context, “New media impact” is relatively a new area for social research. Exactly, such kinds of researches are very few. In spite of this fact, I have observed some research studies, case studies books, websites, research papers and some noteworthy contributions of India and abroad, which are directly or indirectly related to the impact of multimedia technology.

Review of the some major work as follows, with special reference to knowledge, attitude and belief.

Books :


This book creatively pulls together practical experiences and extensive research on pedagogical issues in educational multimedia design. It also deals with many other misperceptions about multimedia for open and distance learning. The book is divided into four clearly defined parts
Part I - Technique and Functions

Part II - Media deployment and media attribute

Part III - Screen writing techniques for video & multimedia

Part IV - Picture word synergy for audio vision &

Koumi's book also points three major issues that are of value to educational broadcasters/producer.

- Research
- Coordination
- Developing practicable design principles

Though the study guides recommend the book for course developers and for those who commission videos audio visions and multimedia products. It is clearly a good resource for those interested in educational media and new media research.

Software – SCRATCH

There are number of software applications, tools of multimedia, ranging from professional to domestic purpose. Most of them are available free on internet. Free to use, free to share, free to modify. One such tool, up for grabs, is Scratch freely downloadable from http://scratch.mit.edu/. Brief review as well as description of the software as follows.

Scratch, lets one create characters that dance, sing and interact with one another. Or create images that whirl, spin and get animated in response to movements of mouse or integrate images with sound...
effects and music clips to create an interactive birthday card for a friend or an interactive report for school.

The software like scratch is an example of how a constructivist environment for learning can be created. Scratch provides core computational concepts with unique project design process. “This project design process combines many of the 21st century learning skills that will be critical to success in the future thinking creatively, communicating clearly, analyzing systematically collaborating effectively, designing iteratively, learning continuously”.


The latest book “Mobile Multimedia in Action” sketch, a revealing picture of how people communicate using camera, cell phones and other mobile multimedia devices. In an overview of the book, James Katz, (Professor of communication and director, center for mobile communication studies, Rutgers, the state university of New Jersey) rightly points out that “through Koskinen’s Savvy analyses, we see what other see; through the sociological imagination, we gain keen insight into the blooming, buzzing world of mobile multimedia practices”. Koskinen provides a perceptive, nuanced study of an emerging practice that is changing the world in both profound and subtle ways.

Mobile multimedia devices spreading faster than practically any other new technology, questions about how these devices are being
used (and abused) to capture and distribute embarrassing or raunchy images and content, and what should be done about it, are surfacing. This book presents the first detailed study of the use of cell phone devices.

Using a variant of social science research known as ethno methodology, Koskinen explores the type of images, photographs take with camera phones and how they use sound to enhance these images. Through illustrative cases, book raises two main questions. First, what kind of methods of expression such as visual or sound, do people use when they design multimedia messages? Second, how do people interact with respond to each other through mobile multimedia devices?

Book review posted on transaction news depicts following observations. What kind of social activities and organization does it best serve-peer-to-peer networks or institutional one.

As a social scientist, Koskinen has a broader M-2 objective centering on the impact of these devices on human relationships and society at large. He point out 'what do people do with there devices? Is mobile telephony moving toward a more practical direction, or will it become a visual chatty channel fit for gossip but not for real news or other practical purposes?

The book "Mobile Multimedia in Action" mainly describes the topic corresponding to multimedia utility and their impact on society.
The important contents of the book are:

- Design elements of mobile multimedia
- Methods of designing multimedia messages (MMS)
- Utility and practices of camera phone
- Societal consequences of mobile multimedia usage.
- Mobile multimedia in society
- Impact of mobile multimedia on society.

"Kalasampada" (Digital Library: Resources of Indian Cultures Heritage)

For the preservation of rare art form, and variety of Indian culture, and to serve as a main resource center for the Indian arts, the Indira Gandhi National Centre for Arts (IGNCA) in collaboration with ministry of communication and information technology, initiated a project, ‘Kalasampada’ for the development of data bank of cultural heritage. It is considered one of the best examples of multimedia application, in India.

In “Kalasampada” scholars (users) can access and view various kind of material & content like’. Lakhs of manuscripts, over a lakhs of slides, thousand of rare books, rare photographs, audio and video etc. Multimedia computer technology has been used for the development of a software package that integrates variety of cultural information accessible at one place. This will provide new dimension in the study of the Indian art and culture, in an integrated way, while giving due importance to each medium.
It serves as digital repository of content and information with a user friendly interface.

A retrieval application has been developed and majority of these materials are available for online access on IGNCA website. Search is available in English and Hindi (Devangari).

Moreover, it is worth to mention here that "Kalasampada" won the prestigious Golden Icon Award for exemplary implementation for e-governance initiative under category best documented knowledge and case study for the year 2004 from the ministry of Administrative reforms and Public grievances Govt. of India.

Now, IGNCA has been introduced various multimedia interactive CD-Rom for sale. An advertisement on IGNCA web displays selling offer, it describes “Interactive Multimedia CDs, Books & (DVD-ROMs from intangible Heritage Series India: Rs. 750/- others: US$ 20)”

National Facility for Interactive Multimedia Documentation of Culture Resources:

It has emerged as world class documentation unit that demonstrates the manner in which the heritage can be recreated virtually, in the holistic and integrated perception of culture. It also acts as a focal point of digitalization of many art & cultural form.

Cultural Informatics Laboratory (CIL):

CIL, is a pioneering unit of the IGNCA establish in 1994 with UNDP assisted multimedia documentation project strengthening National facility for interactive multimedia documentation of culture resources.
Pitara: A website/portal for kids

Pitara is a wonderland for children under 13 filled with fun and activities. The website http://www.pitara.com serves up an array of things to know and do like stories games, magazine discovers and news, proverbs, jokes, questions limericks, riddles and tongue twisters and more.

"Try overtaking a child’s imagination" – Arti Jaiman, the co-founder of pitara.com says much of philosophy. Pitara, was started by her in 1998 along with her husband Ajay Jaiman. By the year 2000 Pitara had built up enough traction on the net to get noticed. Over the next two years, the 80 member strong content and graphics team of Pitara built up the site, section by section. They added math quizzes, word games, reference sections, colouring pages, e-cards, and much more. Pitara soon crossed over 8000 pages of content on website. Today, Pitara reaches over 1,00,000 unique users every month. Many of these are children and there is also a sizable community of teachers who use the site as a teaching resource, especially about multicultural learning.

In fact, today, Pitara has moved from its India focus to an Asia focus, embracing a larger Asian identity, and including folktales and stories from the rest of Asia.

Over the years the website has added more exciting multimedia features for children. For example, at their digital animation studio today, the studio is developing short animation films, CD-based
products to be made available under their own banner, and in partnership with some leading international labels.

Also their Audio Recording studio is being used to develop audio content for their web animations, short animation films and upcoming CD based product range, apart from pod casts and radio programming for children. Pitara has bagged numerous awards and mention for consistent quality and dedication.

The Pitara network has succeeded in creating a fairly pervasive presence in the life of families – children, their parents (primarily mothers) and schools (peers and teachers) are connected to one or the other Pitara initiative, be it the flagship site www.pitara.com or the parenting site www.nurturee.com.

Currently, Pitara’s network of sites has over 150000 unique visitors spread across this spectrum of children and their parents/teachers who voluntarily sought out and visited one or the other Pitara property. Pitara since its inception, make up Pitara’s over 1.5 million pages view.

Some special features on Pitara

Pitara parenting http://www.nurturee.com/

“The site takes care of all the aspects of nurturing both by the mother and father. All the parenting tips are from an Indian/South-Asian perspectives”.18
Homework help [http://www.referenceself.in/](http://www.referenceself.in/) designed to make homework simpler, kid's web search is a virtual reference shelf for school children.


In his Introduction to the book Avik Ghosh writes of the lack of Institutional Memory of Many of these pioneering projects which turn has led to the "recurrence of faulty planning and unrealistic expectations" and emphasizes the need of process documentation.

This book is divided in to two parts. The First part of the book provides a historical overview of the way in which communication technology has been applied in development in the country. The daunting nature of the challenge of development and the opportunity to use mass media; a global perspective and support from International donor agencies and support for such use within and without government led to such experimentation.

Ghosh identifies in his analysis of why the communication campaigns in literacy, health and rural development did not really deliver a return on the investment made.

This book is timely and useful for many reasons. One of the most important reason is that at a time when governments are enamored with using new information and communication technologies ([ICT specifically meaning computers, multimedia and the world wide web])
for development purposes; It is necessary to revisit history to see what our experiences, with older technologies were and to recognize that the failures were not with the technologies but with the lackadaisical delivery and support of services.

**Multimedia and E-content Development**: A Capacity Building Programme of consortium for Educational Communication New Delhi

Country wide classroom (CWCR) programme production is guided by CEC as nodal body of University Grant Commission (UGC). These educational programmes are produced by 17 media Centres under the CEC and on telecast on Doordarshan's National Channel (DD-I) everyday. These programmes could be used either to supplement curriculum or as enrichment Material. They seek to provide knowledge that broadens horizons by giving information on various subjects.

The produce quality programmes indigenously and on sustained basics for CWCR the UGC setup Media Centres in Premier universities of India. The academician's of the various departments of universities and scientists working in laboratories were invited to share their knowledge with the nation on the Indian television network. These centers till 2004 were known as Educational Media Research Centres (EMRCs) and Audio Visual Research Centres (AVRCs). Keeping in view the new challenges/or packaging the knowledge in Multimedia these centers have since been renamed as "Educational Multimedia Research Centres" (EMMRCs) in 2004 by the UGC19.
The Initiative pertains to conversion of 17 Educational Media centers in to Educational multimedia Research centers of the 17 centers will be provided with basic plate form and technology for e-content development. This will help and enable teachers to use this facility to develop educational programmes in their subjects. It could be in: (a) assembled from, (b) small unit/module and (c) full courseware. UOC has developed a scheme of e-content development to financially support the teachers to develop the e-content in their subjects. This scheme is being operated by CEC.

In order to enable the teachers to take advantage of the scheme, CEC has proposed training programmes in e-content development and use of multimedia in education during the 10th plan, the proposal is to train nearly 500 teachers and help teachers to develop e-content to the time of 500 hours. CEC has nearly 4500 hours (17000 Educational video PGM) of Educational Video Programmes. Out of this nearly one third is global standard and good proportion of it is stable knowledge. Our plane is to repurpose this video content into multimedia content and make it available for the teachers on the website. We expect to do this at least for 500 hours within next two years.

List of the major research papers, books, Journal and case studies reviewed for the present study as follows :


3. A Research paper entitled "The Information super Highway: Social and cultural Impact" by Howard Besser (School of Library and Information studies) University of California, Berkeley presented in 1998 at UCLAS School of Education of information studies.

4. Research report on video/interactive games in 2003 (Prensky) the Impact of digital games in education by Begona Gros Department de Teorial Historia at the University of Barcelona. This report concluded that In recent years, electronic games, home computer and the internet have assumed an Important place in the live and children and adolescents. New Media is causing major changes in the nature.

5. A Research paper titled as "The future of Technology and its impact on our lives" by Discovery group Ogilvy and Mather published in 2004


10. A Rizona titled as "Professional Development in Healthcare and Social Care in UK" research by - Ulligi Ganelli and Robert Glend, University of Sheffield, USA, 2003.


14. A Research Paper titled "Impact of development of Hardware and software technologies on educational and social message communication" presented by G.B. Singh (in charge short course Film & TV institute Pune of India) at 2nd National convention held in June 5-6, 2006 at Pune University.

15. A Research paper titled "Communicating Society to Society: Role of Networking and Continuous Interaction" presented by Dr. K. Bhanumathi Coordinator, the Hindu Media Resource centre Chennai) at National convention on Impact of Development in communication Technology on Educational and social message communication held in May 2005.


17. A Research paper titled "Seeking an Interface technology and humanity in Educational and Social Message Communication" presented by Dr. Someswar Bhowmik at National convention on Impact of Development in Communication Technology on Educational and Social Message Communication, held in May 2005 at JMI, New Delhi.


1.10 Feasibility of the Study:

However, may well be living through a period of major economic, political and social changes at the beginning of the twenty first century, associated with the apparent decline of traditional industries. The emergence of new economic sectors and unstable employment across the world. Government and large businesses believe in the revolutionary potential of multimedia, more importantly invest in it. In the light of this development, the study provides a basic or primary framework for assessing the impact of multimedia on Indian society.

The study explores the main debates in sociology, concerning impact of multimedia. The study will provide fundamental guidelines for the future research in the field of new media impact studies.

In Indian context, this study is unique and significant; it will hopefully serve as a guide to both planners and development specialists for achieving desirable social change. Input of the study, surely will be useful for the designing of curriculum and drafting the
course ware for student. Interdisciplinary nature of the study itself establish the importance and need.

Similarly, the study stresses the importance of establishing clear lines for regulatory agencies for better monitoring and control.

For those seeking to help achieve the millennium development goals by 2015 which seems unlikely in the case of most countries including India, the study could well serve as referral with plenty of uncommon experiences. It should also serve as a reminder to the experts and project executors for future Govt. schemes and programme implementations.

In a way, study provide scope for users and on other side, it also establishes need for planner and policy makers.

1.11 Chapter Scheme

Chapter - I : Introduction.

Chapter - II : Universe of the Study and Methods of Research

Chapter - III : Impact of Multimedia on Social Values and Culture

Chapter - IV : Impact of Multimedia on Higher Education

Chapter - V : Impact of Multimedia on Entertainment sector

Chapter - VI : Impact of Multimedia on Environmental Awareness

Chapter - VII : Impact of Multimedia on other sectors.

Chapter - VIII : Result, Summary and Conclusion.

- Appendix

- Bibliography

- Questionnaire
References :


2. World wide web (w.w.w.) tamu./edu./ode/Glohtm visited on 18th May 2007.


