

Publishing on CD-ROM: Indian Potential

Arun Kumar Chakraborty*

Abstract

CD publishing in India and on India is increasing rapidly. In India a few organisations have already started storing their data on CD-ROM and a few libraries/information centre(s) have also started catalogue/bibliographical data on CD. This paper investigates into a variety of CD-ROM products being published in India, and provides information about some Indian CD-ROM producers. It concludes that for generating an intrinsic strength in the market, India should have indigenous CD-ROM databases for national and international usage.

1. INTRODUCTION

Optical information storage technologies like CD-ROM are now well entrenched in India as in other countries. Their usage has gained popularity mainly due to easy availability of CD-ROM titles and also due to declining prices of CD players. Where large amount of data is to be stored, CD-ROM is the right medium. Since the CD discs are replaceable, the technology offers an off-line alternative for search.

We consider the imported CD-ROM products, their usage in India has grown rapidly. However, indigenous CD-ROM publishing is still in its infancy. About 20 vendors are now marketing CD-ROM databases, drives, software, networking facilities and provide maintenance services. (A selected list is given in the Annexure-I).

2. INDIAN CD-ROM REPOSITORY

As per the Delivery of Books and Newspaper Act (Public Libraries Act 1954, amended in 1956), a copy of any books published in India is to be deposited in the National Library, Calcutta; Connemara Public Library, Chennai; Central Library (Asiatic Society), Mumbai; and Delhi Public Library. It is not clear whether the Act also covers book-like materials on media other than paper. Therefore, the National Information System for Science & Technology (NISSAT), DSIR, Government of India, decided to set up a National Centre for CD-ROM Databases at Foundation for Innovation and Technology Transfer (FITT), IIT, Delhi with following objectives:

- ◆ To systematically procure all CDs produced in India and on India, and build a National repository.
- ◆ To act as a single window information service centre for Indian CDs.
- ◆ To organise workshop/training programmes on CD-ROM databases and CD-based services.

*Foundation for Innovation and Technology Transfer (FITT)
Indian Institute of Technology (IIT)
Hauz Khas
New Delhi - 110 016

- ◆ To compile union catalogue of CD-ROM databases and CD based services available in Indian libraries/information centres.

3. REVIEW OF PRODUCTS

A variety of CD-ROM products are being published in India and on India. Information on some of these are given in the Annexure-II. A brief review is given here.

3.1 Full-text Databases

Full-text and bibliographic database on *Environment & Health Asia*, and *Wealth Asia* published by NISCOM/CSIR in collaboration with IDRC, Canada is the first of its kind in India. The inputs are provided on cooperative basis by the countries in South East Asia. The CDs have powerful search and retrieval engines. Features like hypertext links, image viewing, annotations, full-text index and keyword index, calculator and printing options have also been incorporated.

Such joint venture would help Indian institutions to build up innovative databases that would be made available across the globe. Collection and preparation of an authentic database in machine readable format is a formidable problem. Its conversion to CD is easy.

3.2 Bibliographic Databases

The medium of CD-ROM is the right choice for publication of a public database like a union catalogue such as the *National Union Catalogue of Scientific Serials in India (NUCSSI)* of INSDOC. A beginning has been made in this case with the *SUCHAK database on CD-ROM* which is jointly undertaken by SNTD University, Mumbai and the Pioneer Infovision (P) Ltd.

3.3 Dictionaries

A number of secondary sources of information like dictionaries, etc. are also being published in India on CD-ROM (e.g. *Hindi-English Dictionary on CD-ROM*). Using a number of different input formats, this could be used as an online reference tool.

3.4 Business/Company Information

Several CDs providing Indian Company information, their products, business needs, reports, export import data, financial expansion plans, etc. are in the market. These CDs give directory or registry type of information about companies, such as location type lists, selective type lists (city-wise, industry-wise, product-wise, sales-wise, etc.). These could provide information on expenditure pattern (R&D), advertising, raw materials, industry performance, financial information background, raw material consumptions, etc. One can also find profile of Indian stock market, and names of senior executives. Some of the CDs can also be used as a guide on buying and selling. Some examples are:

- ◆ *Electronic Corporate Directory (ECD)*
- ◆ *Business Archives on CD-ROM*
- ◆ *Investment Decision Support System (IDSS)*
- ◆ *Script Watch*
- ◆ *KOMPASS India '96*
- ◆ *MetaStock*
- ◆ *Super All India Yellow Pages on CD-ROM 1996*

Other compilations include: policies, procedures and tariffs of the Government of India with regard to foreign trade (e.g., *Exim India on CD-ROM*). For Tax rules one can look up the full-text of the Income Tax Act, 1961 with amendment rules and circulars, exhaustive commentary on Income-tax law (e.g., *DM Harish on income-tax on CD-ROM*, legal & taxation, export import issues). One can find higher court decisions in the *Jurix Database*.

3.5 Hi-Tech Magazines

Some popular magazines are also being published on CD-ROM media (e.g., *Business India on CD-ROM-1995*, *PC-QUEST on CD-ROM*).

3.6 Multimedia CDs

Multimedia products use a combination of text, graphics, video and sound to present its information content. Apart from Indian users these CDs are useful for non-Indians as well as

for NRIs knowing about Indian culture, language, etc. Publications like *Mystica India*, and *Karishma* give an interesting account of popular beliefs, customs, practices, colourful ceremonies and rituals that pervade the daily lives of most Indians. These are also full of fun, games and puzzles, apart from loads of information. The multimedia introduction to Bengal, *Banga Parichaya*, developed by an NRI, explores the colourful history and culture of Bengal from 2000 B.C. to the present, through a combination of text, sound, slides and video which could help the second generation of Bengali NRIs to learn about Bengal. *All about Sikhism*, on Sri Guru Granth Sahib, includes the teachings of Sri Guru Nanak in the original script of Gurumukhi and translations into Punjabi and English. This product would be useful for all including Sikhs and Punjabies who are not staying in Punjab but would like to know about Sikhism. Similar products are available on *Jainism*, *Buddhism*, *Christianity* and great personalities like Mahatama Gandhi.

3.7 Tourism

Information centres and travel agencies store and display various attractions and facilities available in different centres along with images and music for luring tourists; what else could be better than an interactive system with text, images, graphics, video, audio combined (e.g., *Goa, Taj Palace on Wheels, Rajasthan*).

3.8 Corporate Presentation

This is becoming more popular in Corporate Industry, making their company profile presentation in multimedia CDs. Several Organisations have also started to present their strengths and activities in multimedia CDs. (e.g., *TIFAC*).

3.9 Educational CDs and Professional Materials

A lot of educational CDs e.g., *Innoware Educational CDs* are being published by different developers targetted to children from kindergarten to senior students in colleges, including those preparing for JEE for admission to IIT's. Some products, like *Multimedia Compact Disc on Heart & ECC*, are also useful

for doctors. Some are targetted towards corporate executives (e.g., *Infuse Inc. Products on Management*).

3.10 Profile of Publishers

Asian Health, Environment and Allied Databases (AHEAD), an international consortium sponsored and supported by the International Development Research Centre (IDRC), Canada, has developed CD-ROMs containing health, environment and natural resources related information contributed by leading Asian organisations. NISCOMM is involved in collecting data, writing on CD, and also marketing and selling the products, but replication is done outside India. *SUCHAK* on CD-ROM is a partnership between SNT Women's University and Pioneer Infovision Technologies (P) Ltd. whereas, the *Hindi-English Dictionary on CD-ROM* is published by a foreign company, Gateway Multimedia India Ltd., Electroson BV Amsterdam.

Indian private companies like the Corporate & Electronic Research Centre (CERC), and the Centre for Monitoring of Indian Economy (CMIE) has brought out a set of CD-ROM databases in the area of Indian business/company information. The Informatics India Pvt Ltd. has brought out a CD on export/import and the PremiumPower Software Ltd. on taxation. On the other hand, Reed Information Services, Teledirect, a subsidiary of Reed Elsevier Plc. of UK with its office located in New Delhi, has also brought out a CD on Indian Company information. A few Indian companies also publish stock market data on CDs. Leading publishers bring out their magazines on CD, which could give information with multimedia presentation (e.g., *Business India Group*).

Several Indian and foreign publishers have brought out multimedia CDs. For example, *Mystica India* by the Magic Software Pvt. Ltd., New Delhi—a joint venture between Milpitas-based AMS International and Katra computer centre, Ludhiana, *Gandhi* by Walnut Creek, California, USA, *Yoga* by Krea Technology, Santa Clara, USA. An individual NRI Gautam SenGupta, USA has developed a multimedia CD on Bengal. Kirloskar Computer

Services Ltd., Bangalore on their own has published several multimedia CDs.

Cashing on its best experience of computer education, the National Institute of Information Technology (NIIT), Delhi, has published a set of 20 Innaware Educational CDs. Even some entrepreneurs thought it worthwhile to develop CDs to help preparing students aspiring for admission to IITs.

3.11 Problems

Publishing on CD media is not difficult today. The first and foremost requirement is that the data should be available in machine readable format. The data is to be synchronised with sound, animation, picture and video. Search engines are available off-the-shelf for bundling with the database. CD replication at present is being done outside India because appropriate infrastructure is not available in India.

There is an easy way out for databases with commercial potential. The database producer is responsible only upto the stage of machine readable database development; with a formal tie up, a commercial firm would do the rest including integration of search engine, presentation, CD mastering, replication and also marketing of the product. Similar arrangement has been worked out for the SUCHAK between the SNTD University and Pioneer Infovision, and the *Metal Working Database of Central*

Manufacturing Technology Institute and Informatics India Ltd.

4. CONCLUSION

To generate an intrinsic strength in the market, India should have indigenous CD-ROM databases for national and international usage and also have tie-ups with global database producers for Indian or partial database input support. The scientific and technological information alone is not sufficient to sustain a healthy Indian CD-ROM market. Keeping up with the global trend, other components of the market such as business and finance should also come up.

CD publishing in India and on India is increasing rapidly, and demand for information on Indian CDs is also increasing. In India, a few organisations have already started storing their data on CD-ROMs and a few libraries/information centre(s) have also started storing catalogue/bibliographical data on CD.

ACKNOWLEDGEMENT

The author in his capacity as the coordinator of the FITT-NISSAT CD-ROM Centre, on behalf of FITT, expresses his heartfelt gratitude to NISSAT, DSIR, Govt. of India for supporting and instituting the Centre at FITT, IIT Delhi.

The author is grateful to Dr AK Sengupta, MD, FITT for his constant support and giving permission to write this paper.

CD-ROM Database Vendors

Dr Gautam Sengupta
135/4SE/8 1st Place
Renton, WA 98058
USA

Director
ABI Books Pvt. Ltd.,
404, Skipper Corner
88, Nehru Place
New Delhi 110 019

Regional Manager
Informatics India (P) Ltd.
D-285, 2nd Floor
Defence Colony
New Delhi 110 024

Pioneer info Vision Tech (P) Ltd.
2&3, Karnani Mansion
Copi tank Road, Mahim
Mumbai 400 016

Head, Marketing Division
Indian National Scientific Documentation Centre
14, Satsang Vihar Marg
New Delhi 110 067

Asst. Manager
Allied Health Environmental & Allied Databases
(AHEAD)
Dr K.S.Krishnan Marg
New Delhi 110 024

Regional Manager (North)
M/s Global Information Systems Technology Pvt.
Ltd. (GIST)
Post Box No. 8
18-19 Comm. Centre
Malviya Nagar (Ext.)
Saket
New Delhi 110 017

Director
Premium Power Software Pvt. Ltd.
Kasturi Building, 2nd Floor,
30, Popatwadi, Kalbadevi Rd.
Mumbai 400 002.

CD-ROM Drive Vendors

Digital Equipment (India) Ltd.
Product: Alpha Workstations
Price: 3-30 Lakh
Manuf: Digital Equipment Corp.

HCL Frontline Ltd.
Product: Beanstalk HPC Series
Price: 50,000 - 1,00,000
Manuf: HCL Frontline Ltd.

DCM Data Systems Ltd.
Product: Gateway 2000
Price: 1,38,627 - 1,55,364
Manuf: Gateway Systems

Wipro Infotec Ltd.,
Odin Comp. Ltd.,
Unicorp Indus Ltd.
Product: Mac Performa Series
Price: 84,900 - 1,34,500 above

Pertech Computers Ltd.
Product: Prodigy
Price: 55,000 - 1,19,400
Manuf: Pertech Computers Ltd.

Wipro Acer Ltd.
Product : Aspire
Price : 80,000
Manuf: Wipro Acer Ltd.

Unicorp Industries Ltd.
Product: Compaq Presario
Price: 90,000 - 2,00,000
Manuf: Compaq Computer Corp.

Silicon Graphics Systems (I) Pvt. Ltd.
Product : Indiglo 2 etc.
Price : 10-40 lakhs
Manuf: Silicon Graphics Inc.

Wipro Infotec Ltd.,
Fujitsu ICIM Ltd.
Product: SunSparc Workstations
Price : 4.5-20 Lakh
Manuf: Sun Microsystems.

A. Full-text Databases

The *AHEAD* CD-ROM published by NISCOMM (PID) and IDRC, Canada, contains the following titles :

1. *Environment & Health Asia*. It comprises full text databases on collection, treatment and recycling of waste water and solid wastes; water supply management; water resources planning; hygiene, education and community participation, pigwaste management and recycling, etc. It provides bibliographic information with abstracts on water supply and sanitation, water borne diseases, list of experts on water supply management, resource planning and community participation contributed by Asian Alliance of Appropriate Technology Practitioners (APPROTECT ASIA), Manila, Philippines, besides bibliographies and list of projects.
2. *Wealth Asia*. It contains full-text databases on Indian raw material resources including plants, animals and materials. It is a bibliographic database on world literature covering all aspects of medicinal and aromatic plants, and databases on tropical oil seeds, crop protection, economics and marketing and oil product quality.

B. Bibliographic Databases

1. *National Union Catalogue of Scientific Serials in India (NUCSSI)*. INSDOC, New Delhi. It provides valuable reference information for resource sharing, and covers 350 libraries with nearly two lakh holdings data. It is updated annually.
2. *SUCHAK on CD-ROM*. SNTD Women's University and Pioneer Infovision Technologies (P) Ltd. It is a comprehensive bibliographic reference database covering the fields of sociology, women's studies, home science, library science and special education. It includes cumulative bibliographic reference to articles published in more than 900 Indian and foreign journals, books, thesis, dissertations, reports, conference papers, etc. At present the references are restricted to materials in English, Hindi, Marathi and Gujarati.

C. Dictionaries

1. *Hindi-English Dictionary on CD-ROM*. Gateway Multimedia India Ltd., and Electroson BV, Amsterdam. This CD helps in translating Hindi into English, using a number of different input formats. One can enter an English word into the description field, and the system will translate the code into the respective Hindi word and also generate the corresponding codes in the other field. Every entry consists of a title in transliteration and Devanagari, followed by an English description of the titles' meaning. It is useful for verifying meanings or pronunciations of words.

D. Business/Company Information

1. *Electronic Corporate Directory (ECD)*. Corporate & Economic Research Centre (CERC), Bangalore and marketed by Cyber Mart(I) Ltd. It provides corporate information on over 20 ready-to-use reports, information on board-of-directors, key financial expansion plans, export-imports data, availability of raw material and finished products, plants, and locations of on and around 4000 companies. It also provides information on expenditure pattern (R&D), advertising, raw materials, industry performance, financial information background, raw material consumptions, etc.
2. *Business Archives on CD-ROM*. CERC. It is comprehensive collection of four year's news clippings on almost everything related with business. It has been classified on the basis of industry, company, business group and miscellaneous news items and is updated quarterly.
3. *Investment Decision Support System (IDSS)*. CERC. It tracks over 4000 Indian companies over the last five years on a day-to-day basis. It is crammed with more than 2000 balance sheets. Innumerable newspaper clippings. A powerful 'Nostradamus' to analyse and forecast the effect of various events like raw-material price fluctuations, changes in duties and taxes, etc. CDs are updated fortnightly.
4. *Script Watch: Profile of Indian Stock Market*. CERC.

5. *Kompass India'96*. Reed Information Services, Teledirect, a subsidiary of Reed Elsevier Plc., UK. [Its regional office at New Delhi]. This CD-ROM lists over 58,000 companies, 40,000 product codes/names and 100,000 executives. Provides search & retrieval based on company name, geographic location, type of business activity, type of company, exporter/importer, annual turnover, number of employees, etc. It has got facility to browse/download to a file/print.
6. *Business India on CD-ROM - 1995*. Business India Group. This CD-ROM is a collection of one year's contents of the Business India magazine, published during the calendar year 1995. It also contains data from the Bombay stock exchange.
7. *MetaStock. DART*. It provides information about financial position of companies listed in the Indian Stock Exchanges. The exhaustive information can be updated daily simply by using free access to DART's Bulletin Board Services.
8. *Super All India Yellow Pages on CD-ROM 1996*. Super Media Ltd., Mumbai. This CD-ROM is a guide on buying and selling, by offering the business entries of more than 6,000 product & services index (business activities) in over 500 cities of India, 1000 locations/places in India.
9. *Exim India on CD*. Informatics India (P) Ltd., Bangalore. This CD provides compilation of policies, procedures and tariffs of the Government of India, comprising of both imports and exports with regard to foreign trade. It is updated quarterly.
10. *DM Harish on Income-tax on CD-ROM*. PremiumPower Software Pvt. Ltd, Mumbai. This CD-ROM contains the full text of the Income Tax Act, 1961 with amendment, full text of rules and circulars, exhaustive commentary on Income Tax law by Mr DM Harish, eminent lawyer and author. Supreme Court, high court and tribunal decisions, and much information on income tax has been included.
11. *Tax Expert*. Odyssey Technologies Ltd. It is a comprehensive electronic reference manual covering direct tax decisions of various high courts and the Supreme Court. It contains full

unabridged text of 12,000 decisions which are fully indexed on every attribute of the case.

E. Multimedia CDs

1. *India Mystica*. Magic Software Pvt. Ltd, New Delhi. This interactive multimedia encyclopedia explores the myriad of popular beliefs and practices, and colourful ceremonies and rituals that pervade the daily lives of most Indians.
2. *Karishma: The Wonder that is India*. Padmini Multimedia Ltd., New Delhi. It is a journey through time, i.e., India—past and present. Information about the temples of the sun-gods to the places of the kings, etc. has been included with 500 pictures, 10 minutes colour video, 2 hours of digitally recorded, specially composed music and effects in 500 megabytes.
3. *Banga Parichaya—A Multimedia Introduction to Bengal*. Gautam SenGupta, USA. It explores the colourful history and culture of Bengal from 2000 B.C. to the present through a combination of text, sound, slides and video. In this programme one can find history of Bengal; over fifty biographies of prominent people of Bengal; Musical instruments of Bengal that will come alive at the touch of a button; examples of songs from Nazrul, Rabindranath and others, and much more.
4. *All about Sikhism: A new CD-ROM*. AMS International, Milpitas, and Katra Computer Centre, Ludhiana, Punjab. It is a new CD-ROM on the Sri Guru Granth Sahib and includes the teachings of Guru Nanak in the original script of Gurmukhi and translations into Punjabi and English. Over 250 questions and answers about Sikhism, and over 100 hymns are also included. It contains different computer games about Sikhism, the lives of the gurus and saints, events in Sikhism history, details about nearly 100 gurdwaras, and background music to enhance learning are also included.
5. *Fables from India: The Panchatantra*. Padmini Multimedia, New Delhi. This CD-ROM is based on the world's oldest known collection of fables/stories with a moral which date back to 2000 B.C.

6. *Gandhi: Apostle of Peace and Non-violence*. Walnut Creek, California, USA. It depicts the life and message of Mahatma Gandhi. Gandhi's role as the liberator of Indian from British rule was only one of his many achievements. His life and teachings have a universal meaning for all humankind of all time. It has 45 minutes of selected movie clips. Out of 175 photos, some taken from the collections of the Gandhi National Museum & Library, New Delhi are rare. Letters-copies of original letters in Gandhi's handwriting are also included. Interactive timeline, interactive maps, hypertext are the other special attraction of this CD-ROM.
7. *Yoga: A Multimedia Guide to Yoga*. Krea Technology, Santa Clara, USA. It is fantastic to watch yoga postures, generated in the computer, using the latest 3D animation techniques in the form of mannequins.
8. *Buddhist Texts Being Revived: The precious heritage of Dhamma Vachana*. The words of Dhamma or teachings of Lord Budha is transcribed into Devanagari from Burmese script and put in CD- ROM, so that valuable words of the great master are preserved for future generations.
9. *Exploring Bible*. Religious texts and religious books publisher. It has got four sections: The King James bible, biblical timeline, sights and sounds, and lessons and inspiration. It has almost 40 minutes of video clips depicting the dramatic incidents from Bible.

F. Tourism

1. *Goa—The Pearl of Asia*. Kirloskar Computer Services Ltd., Bangalore. It covers the history, people and place of Goa in informative and entertaining modules. It is an illustrated travel guide covering the facilities available in Goa in detail, and is an entertainment in itself.
2. *Taj Maha—A Lithic Poem*. Kirloskar Computer Services Ltd., Bangalore. Besides the history and architectural details of the Taj, there is data on accommodation and transportation to Agra.
3. *Palace on Wheels*. Multimedia interactive CD with information on seven packaged themes on Rajasthan are among the four new features added to the newly developed Palace on Wheels CD.

G. Educational CDs and Professional Materials

Many educational CDs are pouring into the market by different developers targeted to students.

1. *LOTUS Software on CD-ROM*. Padmini Polymers Ltd, New Delhi. The software Lotus Smart Suite, comprises a pack of five individual softwares including Lotus 123 spreadsheet, Lotus Amo Pro, Lotus Approach, Lotus Freelance Graphics and Lotus Organizer.
2. *PIXEL*. Pixel Multimedia has plans to widen its gamut of activities from multimedia for providing training on multimedia and executing offshore projects. The media service would include multimedia presentations, graphic design, audio visual presentation and image grabbing and digital photo editing. Pixel also plans to prepare software packages for school and college students as well as for those preparing for JEE for admission to IIT's.
3. *Quicktopix CD Publishing Software*. This software for windows is a CD authoring system for databases, multimedia applications, audio tracks and backups. The software supports a number of write once recorders; CDs can be produced from data on local disks across networks.
4. *Multimedia Compact Disc on Heart & ECG*. The Electronic Research and Development Centre (ER&DC). It contains a trilingual multimedia program on heart and ECG. The first disc was formally released at Trivandrum on November 22, 1995.
5. *Innoware Educational CDs (20 CDs)*. NIIT, New Delhi.

H. Miscellaneous CDs

1. *The World of Plants*
2. *The Hunt for Setonica*
3. *Digital Geometry*
4. *Learn with Woody: More about Plants*
5. *Learn with Atomio: Atoms, Elements and Compounds*
6. *Learning Internet: The First Step*.