

EXECUTIVE SUMMARY

INTRODUCTION

1. The magnetic media industry consisting of audio cassettes, video cassettes, computer tapes, floppy discs has turned out to be a major industry, comparable in turnover to industries like bulk drugs and machine tools. The turnover of the industry which is at a level of Rs. 500 crores presently, is likely to double in next few years, and thus demands greater consideration by technology planners, industrial planners and national standards organisations and R & D institutions. Magnetic media is by far the cheapest, largest and most popular means in the world of storage and replay/retrieval of sound, image and data. These are required for both domestic and professional applications and continue to play a dominant role despite introduction of other media like laser discs (CD).
2. Mag-tape industry is one of the fastest growing industries in the world and specially so in Japan, where the two largest producers TDK and Sony are located. Japan supplies over 60% of the share of the world market. The market is basically for conventional tape, but now digital audio tape (DAT) and compact discs (CD) are making in roads.
3. The figures for world wide video cassettes(VC) sales have increased from 238 million numbers in 1983 to 520 million numbers in 1986. It is expected that by 1990, the VC sales will exceed 1 billion Nos, world-wide. The market is basically for domestic quality tape, but of late super-VHS and compact disc video (CDV) have started cutting in to the high end market.

INDIAN SCENARIO

AUDIO TAPE

4. In India there are 10 manufacturers and three more plants are under implementation in the field of Audio tapes. The overall licensed capacity is 17,300 MRM for 6.35 mm tape or 320 million Nos. in C-60 cuts. The total installed capacity is 11,150 MRM or 206 million Nos in C-60 cuts. these units are mainly located around Delhi, Bangalore and Bombay.
5. The demand is expected to grow steadily and this industry is aware of this. The units are considering, putting up second lines to double their capacity. However the tape quality is not good, and only low-end domestic quality is being produced. The result is, continuous import of coated and professional quality tape. However, units like Murugappa, Weston, Jai & Tony are now producing tape which is acceptable for high speed duplication.
6. The main source of technology are Hongkong, USA and Japan but the technology imported, in the country is from little known companies. No high grade manufacturer like Sony, TDK, JVC, has so far agreed to transfer know-how.

VIDEO TAPE

7. In the field of video tape, there are five manufacturers and, more plants are

under implementation. The total licensed capacity is 14,340 MRM or 57 million numbers in terms of E-180 cuts. Installed capacity by 1990 is 11,340 MRM or 45 million numbers. E-180 cuts. The estimated production by 1990 is 9,300 MRM or 37 million numbers. E-180 cuts. Capacity utilisation is 80%. There are 10 more units whose FC's have been cleared are expected to take up projects.

8. So far only Garware and Prakash are in the market. The tape quality is not high and does not compare with imported tape. Since these units are not even one year old, there is no R & D, or effort at indigenisation of raw materials. The sources of technology are USA and Singapore and once again no high grade technology has been obtained.
9. The demand is very high and is being met by import of pancakes. No accurate figures of import are available but after discussions, it is estimated that 40-45 containers per month are being imported. As each container carries 50,000 E-180 cuts, this means an import of a minimum of 24 million cuts/annum, or 6,000 MRM. The expected demand for 1990 of 12.7 mm is 10.4 MRM which will rise to 14 MRM by the year 1992.

Computer Tape

10. There is no Indian manufacturer of computer tape. The volume does not justify a separate unit but as demand rises the most likely unit to take up this project is SPIC Madras. Also there is no manufacturer of floppy disc tape. The requirement for both the above is met by Imports.

Major Findings

11. Despite the size of the industry and its high growth potential, no R& D activity exists in the field. R&D work in national laboratories stopped some ten years back. There is no significant R & D activities by the existing manufacturers and none have even approached DSIR for R & D unit recognition. The industry depends on imported polyester base film and gamma ferric oxide, and no effort have been made to indigenise them.
12. The product range of the industry is limited to low quality and domestic variety, and there has been no upgradation of technology, despite world-wide rapid strides resulting in better quality products with better economics in production.
13. The technology imports have been from less known companies, and no internationally known manufacturers figure in the list of technology supplier to India. The installed machineries are of minimum configuration, resulting in producing only low quality tapes by the industry. Further, necessity for development of higher grade tapes is obviated by the fact there are no indigenous manufacturer of player and recorders capable of using metal tapes or better high bias tapes. The quality of professional audio tapes supplied by a couple of Indian manufacturers to users like AIR are not satisfactory. However, M/s. Hindustan

Photo Films Mfg. Co. supplies satisfactory audio tapes to AIR, but their manufacturing in the country is limited to slitting and packaging of imported bulk tapes.

14. In general, despite indifferent quality, the industry has rendered valuable service in saving foreign exchange and that too in almost a "free trade" environment wherein foreign makes are easily available. Under these circumstances the industry deserves calculated protective measures to encourage present efforts without compromising consumer interests.
15. The major technology gap is the development of "Know-why" specially in the area of slurry formation and coating. Unless this ability is developed either in the industry or centrally with national laboratories, it would not be possible to upgrade the technology.

MAJOR RECOMMENDATIONS

16. Research & Development

Government should take action to nominate a laboratory like NCL/NPL to undertake development of "Know-why", specially in the areas of slurry formulation and coating technology. Sufficient funds should be placed at their disposal so that the existing audio and video technology can be upgraded. Alternatively, industry should undertake to fund sponsored research at IITs, or CSIR Labs in these specific areas.

17. Standardization

- (a) The industry has become so large that now consumer protection is a "Must". The manufacturers of the end product, blank or pre-recorded; must be made to state the quality of the tape and the quantity/playing time of a cassette. e.g. Audio Tape could be marked "C-60 normal bias tape". Similarly video tapes, blank or pre-recorded should be marked "E-180 standard quality tape".
- (b) It is recommended the BIS issues a standard for video tapes and video cassettes. Also that it revises the standard for audio tape with proper type gradations for various qualities. They should also publish test methods and establish testing facilities.

18. Test Facilities

ERTL (North) have been contacted and it was found that testing facilities for video tape are not available with them so that these could be easily utilised by small units like loaders and duplicators. They consider that they have 70% of the equipment required. If the balance 30% could be procured, they could test all tape being imported or being produced in India and small scale loaders could be well informed on whether outside countries are supplying off-grade

tape to India. As at present the price competition is so intense that tape price for video pancakes have reduced from 18 US Cents/ 100 ft. to 12 US Cents/100 ft. in one year. This immediately gives rise to doubts regarding the quality of supply.

19. **Raw Material Import**

Government must encourage the development of sources for indigenous raw materials, specially :

- (a) Polyester film (audio and video grade)
- (b) Gamma ferric oxide.

Their annual requirements are given in detail at Annexure 15.

20. **Capital Goods Import**

Even though certain machines have been developed for audio tape, it is found that these are minimum configuration machines and it may not be possible to use them for higher quality products. Therefore, it is felt that for the present the machinery for video tape, as well as better quality of audio tape will have to be imported. However, development efforts must be continued to improve the machines, before import is restricted.

21. **Import of Technology**

(a) **Audio**

There are 10 units in operation with 5 Foreign Collaborations. The eleventh unit of M/s. Straw Products (JK Group) and another 2 units in Rajasthan are under implementation. Government should now be highly selective and only import of "high grade technology" should be considered. The future FCs could possibly include high bias, metal tape and DAT.

(b) **Video**

All FCs are from little known consultants/companies. 15FCs are cleared, 4 from the same collaborator in Singapore and 2 from same collaborator in UK. Once again, all out efforts are required to get FC from high grade tape manufacturer of VHS tape. The FC could possibly include premium quality VHS tape, as well as S-VHS tape. Here also Government should now be highly selective in clearance of further FCs. The following points should be taken into consideration :-

- (i) Responsibility of collaborator to include obtaining JVC/equal standard certification.

(ii) Technology should include V-O production to ensure ultimate desired quality product.

(iii) Alternative sources of supply of capital goods and raw materials should be possible on specifications to be given by the collaborator.

(c) Computer/Floppy Disc. Tape

The total demand at present does not justify a large viable, separate unit. Out of the already licensed parties, the most likely project to materialise is SPIC, Madras. No further import of technology is considered necessary, till domestic demand rises or export is firmly established.

22. Import of Coated Video Tape

One of the causes of fierce competition in the market is that, manufacturers of video tape in Korea, Hongkong and Singapore are dumping "Off-Grade" material, at low prices, in the Indian market. Under these circumstances, in the interest of giving much needed support to this budding industry, consideration should be given for reduction in custom duty on imported inputs, to enable the new Indian manufacturers to compete against imports. Alternatively, the import duty on coated video tapes in pancake form should be increased as soon as production levels cross about 20 million cuts.

23. Manpower Development

This has already been identified as a thrust area. The industry is now large enough to form an association of its own and identify the precise needs. These can then be passed on to the authorities concerned in the Govt. as well as in the education field. In the meantime FCs could include clauses to enable Indian companies to train 8-10 individuals at plants abroad. These could form the core and train our own workers.

24. V-O Manufacture

With the present status of Indian V-O manufacture and cassette loading being not in the state of art, despite good quality tape, the consumer would end up in poor quality cassettes. In order to introduce general awareness of good quality video cassettes, it would be essential to encourage, set up of an organised unit on a large scale for manufacture of V-O and encouraging use of automatic V-O loaders in proper air conditioned and air clean environment. While making this recommendation it is learnt from one of the Hong Kong suppliers of technology that China has had over 16 tape coating lines and over 2 dozens of V-O manufacturing facilities. Most of the plants are basic grade which resulted in a large production of low quality video tapes. It is further learnt, that on the basis of their experience, recently, they are establishing with very much improved know-how, both tape coating and V-O manufacture, in scientific conditions specially for export markets. Now that India has entered into this field in a large way, the time is ripe that in future, technology imported should be carefully considered to include all modern state of art practices in this industry to enable India to obtain international quality video tapes and also enable this industry to compete in the export markets.