

EXECUTIVE SUMMARY

1. PRINTERS

The Printer is an important peripheral to the personal computer (PC). It is a device which creates a tangible, portable output out of the electronic images viewed on a monitor.

2. PRINTER TYPES

Printers can be broadly classified into the following :

- * Impact printers
 - Dot-Matrix Printers (DMPs)
 - Character Printers
- * Non-impact printers
 - Ink-jet Printers
 - Laser Printers

3. LASER PRINTERS

Laser printers are among the most sophisticated of printers available today . They are more similar to photocopiers than the standard impact printers. They produce ultra high density (300 dots per inch and above) matrix images. To get these dot densities, the printers produce the image with a laser beam instead of print wires. However, the actual character images are read out of memory, dot for dot, similar to the manner in which dot-matrix printers read their images, The images are then transferred out of memory, written onto the drum by the laser and transferred onto paper by the photocopying process.

4. LASER PRINTER TECHNOLOGY

The heart of the laser printer is the Laser Engine (also called the Laser/Photocopier unit). Most manufacturers build their own system around this engine. Since the first company to successfully produce a low cost laser engine was Canon, USA, Inc, most of the laser printers today use the Canon engine.

5. ADVANTAGES

Advantages of laser printers are the high quality of printing, high speed of printing, scalable fonts and possibility of combining text with graphics.

6. LEADING MANUFACTURER

Hewlett Packard (HP) is the leader in the laser printer market. Developments in laser printer technology are largely those of HP.

7. LASER PRINTER MARKET

There has been a spurt in the laser printer sales in India which has been growing quite rapidly of late. The laser printer market in India which was 3850 pieces at an estimated value of about Rs. 27.0 Crores for the year 1992-93 grew to an estimated 23000 pieces in 1994-95 worth about Rs. 145. crores. The growth of the Indian market is expected to be 30-53% p.a. for the next few years.

8. PROBLEMS ENCOUNTERED

However, these volumes are still insignificant for any company to consider assembly or manufacture of laser printers in India. A few Indian companies have tied up with foreign partners to import laser printers for sale in India. These companies have personnel trained from their suppliers and hold an inventory of spares and consumables to provide service.

9. MARKET DEMAND

The Indian market for laser printers as also the world market is dominated by HP's Laser jet series of printers. They have a 80-85% market share in India. Epson is a distant second with about 8% market share. The other players have very low market shares.

10. USER SEGMENTS

The segments which are major users of laser printers include the Desk Top Publishing industry and the Corporate sector. Home users form a very small end use segment.

11. CONCLUSIONS

- 11.1 There is no manufacturing base in India for laser printers due to the lack of volumes which would make the business viable. Without the manufacturing base the raw materials and component industry has not developed. Under the circumstances, developing a purely export oriented manufacturing industry is not considered feasible, both due to lack of expertise and also due to lack of economies of scale. The quality of infrastructure is also cited as a constraint for a purely export oriented, large scale unit. In the short or medium term, setting up manufacture would be difficult. In the long term, manufacture would be an option if the domestic laser printer demand increases

substantially. But as there is no ready access to the complete technology, it would be difficult.

11.2 A number of Indian companies have manufacturing or assembling facilities for dot-matrix printers in India. Almost all these companies have collaborators who have a manufacturing presence in laser printers elsewhere in the world. Government might consider encouraging these companies to manufacture laser printers in India by offering sales tax concessions on laser printers sold in India.

11.3 Given the current market and technology environment, the future of this industry could be set out as the following :

- * There is hardly any scope for setting up a manufacturing facility to cater to the domestic market given the low domestic demand.
- * The issue of lack of component manufacturing capability and standards would also have to be addressed if manufacturing activity is taken up for the industry to grow.
- * An export oriented unit for laser printers would be difficult to establish given the restricted access to technology, lack of component manufacturing capabilities and the laser printers manufacturer's complaint of poor quality of infrastructure.

12. RECOMMENDATIONS

12.1 If the demand for laser printers increases substantially in future, steps need be initiated to support the manufacturers.

12.2 Component manufacturing capability and standards would then have to be developed to support the manufacturing industry.