DEVELOPMENT OF TYPESETTING

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1440
Handsetting
Each letter is made of lead and produced from a mould. Lines of type are constructed in a 'setting stick'. Hyphenation and justification are carried out by the compositor.

Handsetting of Metal Type

1890's
Mechanical Typesetting
Prior to this date experiments were conducted using mechanical handsetting devices. None of these proved successful.

Linotype
Lines were set on a keyboard. Complete lines or slug was cast on the same machine. Operator had to make decisions about line endings and hyphenation. Justification was achieved automatically by a wedge device.

Linotype Mechanical Typesetting

Monotype
Lines were set on a keyboard, each letter being recorded by punched holes on a spool of paper by compressed air. The spool of paper is inserted into a casting machine. This machine cast single characters into lines of type.

Monotype Keyboard

1970's
Computer Typesetting
Originally this equipment was modelled on the hot-metal machines. The die-case was replaced with the letters stored on a negative glass or film. The main advantage of this method of typesetting was :

(a) Type could be viewed on the screen, initially just a line on a 'marching display'.

(b) End of line decisions of justification and hyphenation were achieved automatically by the computer. Initially this was done by the operator placing hyphen(s) in a word so that the computer could choose the most suitable word break.

(c) All type appeared on the screen (VDU: visual display unit) in the same size. Codes had to be inserted for point size, typeface, leading, style and line length.

(d) Editing and correcting was easily achieved.

(e) Type could be reformatted: change typeface, size, line length, leading, etc.

(f) The phototypesetter set type faster than conventional mechanical hotmetal typesetting.

Monotype Caster

Towards the end of the seventies, simple line graphics could be achieved on the computer. The method of setting type changed from a negative master to a cathode ray tube which set type by a series of scanned lines. The typefaces were stored in the computer's memory in the form of scanned lines. The cathode ray tube was used for a short period as a light source for the negative master characters. Typesetting was initially stored on punched tape, this progressed to a 5.25 inch floppy disk. The equipment consisted of a separate keyboard and photosetter, but in some instances it was incorporated in one unit. This unit was known as a Direct-Entry Photosetter. These units could be purchased for around £10,000 and started to be within the price range of the general printer.

1980's
Microchip Technology
Mirco-computers in the form of PC's and Apple Macintosh are used as input for text, illustrations and graphics. Full page make-up is achieved on VDU's with no cutting and pasting - what you see is what you get (WYSIWYG). Other benefits are that the text can be scanned into the computer using Optical Character Recognition (OCR) software, instead of time-consuming keyboarding.

Type, illustrations and graphics are set digitally onto bromide paper, film or a litho plate, in either correct or reverse reading. The output device is now known as imagesetter rather than a phototypesetter, because of the wide range of images that are set, rather than just typematter. For proofing purposes a laserprinter can be used instead of an imagesetter. This outputs onto plain paper at 300, 400, 600 and upto 1200 dots per inch, for certain kinds of work this may be acceptable to be used as the final image for platemaking.

We have moved completely away from the purpose-built phototypesetter, which were designed purely for typesetting and could not be updated. Today micro-computers can be purchased to do a variety of office work of which typesetting, or desktop publishing as it is known today, is only a small part of the company administration. The computer and laserprinter can be purchased for around £2,000. Developments have changed dramatically in the capital expenditure of equipment insofar as hardware is relatively cheap but software for page make-up, graphics and scanning costs around £500 and is being continually updated.

QUESTIONS ON DEVELOPMENT OF TYPESETTING

(1) What year was the invention of printing from movable type ?

(2) Give 3 features of handsetting ?

(3) What year was the invention of mechanical typesetting ?

(4) Give 2 examples of mechanical typesetting ?

(5) What is the difference between linotype and monotype ?

(6) What were the features of the first computers used in typesetting ?

(7) Name 3 advantages of the first computer typesetting machines ?

(8) Name a method of storing typesetting with the 1970's computer ?

(9) Name the phototypesetting unit which consisted of a keyboard and photosetter ?

(10) What was the approximate cost of these machines ?

(11) What was the main achievement with the microchip technology of the 1980's with regard to inputting data ?

(12) What mechanical operation does PC's and Apple Macintosh computers replace with regard to page make-up ?

(13) Give another method of inputting text into the computer other than a keyboard ?

(14) Name a product from the imagesetter other than film and bromide paper ?

(15) What was one of the problems regarding purpose built photosetters ?

(16) What term has desktop publishing replaced ?

(17) Today major improvements are not being made to the hardware, where are the changes taking place ?