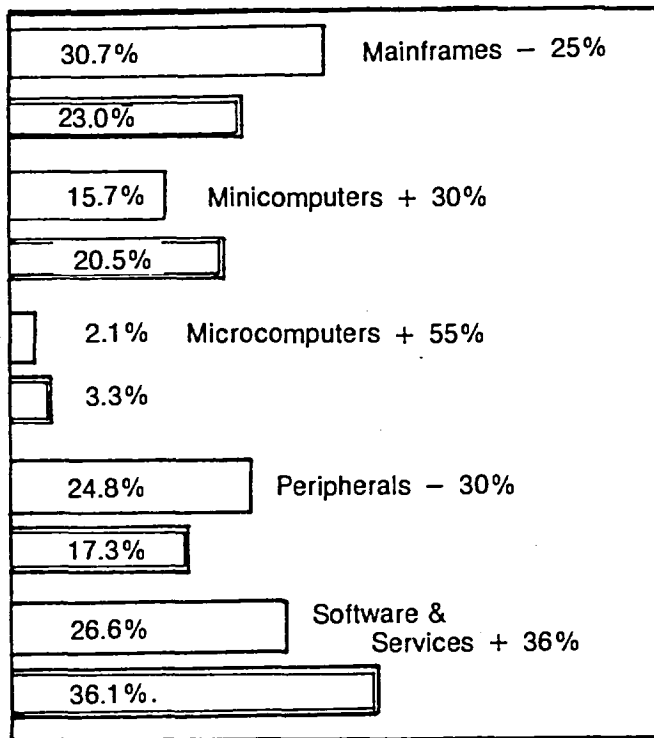


shipped during 1982 worldwide. This reflected an increase of more than 100 percent over 1981 figures.

With the increasing demand for desktop computers during 1982, impact printers became a key supply item. Japanese companies virtually dominate this sector and have succeeded in lowering the supply price for low-end printers to less than \$500 per unit. Faced by stiff opposition, many peripheral producers have reacted by developing more sophisticated models calculated to appeal to the serious business user, and selling for a higher price. This is also the case with desktop computers.

Table 2.1
CHANGES IN RELATIVE MARKET SHARES
FOR SEGMENTS OF THE COMPUTER
INDUSTRY 1981-1986



□ 1981 % □ 1986 % (estimate)

Source: Datamation

Software:

Table 2.1 shows that the software and services segment of the computer industry should be the second fastest growing segment over the next few years. Industry sources estimate that there will be a 36 percent overall increase in this segment between 1982 and 1986. The U.S. market for software and services now exceeds \$12.5 billion per annum. The field is attracting a rapidly growing number of producers. Many of these are small sized companies employing less than ten persons and there seems to be no end in sight for continued expansion at this level. Software production is an essential ingredient for a viable computer industry. In order to succeed with software packages, the products must be high quality, error free, and standardized in programs and languages. Further, the ability to provide custom

capabilities has provided many smaller companies with access to lucrative businesses.

IBM produces 14.9 percent of the total U.S. requirement for software. Yet, despite this fact, there are an estimated 6,000* U.S. companies involved in software design, production, and marketing. A number of these companies achieve international pre-eminence because their products are marketed by the larger hardware producers, but the vast majority of software products exist to service custom markets and their packages are produced in relatively small quantities.

It is not possible to document commercial and business software because of the complexity and fragmentation of the market. The market for entertainment software packages is, however, fairly well documented since it involves the analysis of retail success. A recent survey by Computerware and Electronic Retailing magazine has established that the Nation's seventy-five leading software houses produced a total of 3,624 software packages during 1982 and that 54 percent of their products are offered for entertainment, 33 percent for educational purposes, and 11 percent are offered for home business use. It should be noted that companies concentrating on computer software games packages, an area which has been a "boom" area for a number of years, are now experiencing severe sales losses and it appears that this segment of the industry is now in decline.

* Data Sources

2.2 U.S. PRODUCERS

The U.S. computer industry currently employs about 360,000 people in a total of approximately 1,200 manufacturing facilities. The latest hard data available from the 1977 Census of Manufactures listed 932 manufacturing establishments. There had been an increase of approximately 30 percent by the end of 1982. The four largest U.S. producers control approximately 45 percent of all computer products manufactured in the U.S. The industry leader, International Business Machines Corporation, alone produces approximately 33 percent of the national total for computer products. The three next largest companies, Digital, NCR and Control Data Corporation collectively contribute approximately 11 percent to the national total. IBM's dominance in the market sector has not prevented other American companies from participating successfully in the computer industry either as OEMs, suppliers to OEMs or as independent peripheral manufacturers or software producers.

Over the last twelve months, however, a number of early leaders in the industry have developed severe financial problems due to a number of factors but mainly due to misreading marketing trends in the industry. Other companies, faced by increasing price competition at home and overseas, have moved their production bases outside the U.S. Yet, despite setbacks in some sectors, new companies are constantly emerging in this extremely fragmented