MICROCOMPUTERS: STRATEGIC TOOLS FOR THE 1990s

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The technological advancements of the past decades in computer technology have created a new perspective for many businesses regarding information management. In the past 10 years alone, with the proliferation of microcomputer technology, many managers can now perform information processing and computing tasks with such ease that at no other time in the history of business has information needed for decision making been obtainable in such an effective and efficient fashion. This article discusses the value of microcomputers as strategic tools and provides directions for the future strategic utilization of microcomputers in support of business goals and objectives.

Introduction

An unprecedented surge in information technologies within the past two decades has presented many new challenges for organizations in meeting the demands of decision makers in the effective and timely management of information in the organization. The technological advancements in computer technology, telecommunication technology, and office automation technology of the past decade have also led many businesses to the recognition of their information resources as one of the mainstream organizational resources which have traditionally also included human, financial, material, facilities, and management resources (Bryce, 1983; Burk & Horton, 1989; Henderson & Treacy, 1986; Kubicki, 1985; Thrieaf, 1984; Trauth, 1984). Organizations have grown to view their information technology resources as a major strategic asset and to utilize them in support of maintaining a competitive edge in the world market (Belohlav & Raho, 1987; Ives & Learmonth, 1984; King, 1988; McFarlan, 1984; Nolan, 1982; Rockart & Scott Morton, 1984; Sullivan, 1985). In recent years, information technology resources have come to represent the single most important competitive weapon available to corporate management for corporate growth and survival. Management, in turn, has begun to realize that they cannot afford to abdicate utilization of this valuable corporate asset. Organizations now have the opportunity to utilize information technology resources in ways that could
lead them to the discovery of new markets, products, or services - or an entire new way of managing a firm.

Traditionally, information technologies have relied on the technology of mainframe computer systems which utilized centralized information processing centers. But, in the past decade alone, with the proliferation of technological advancements achieved in microcomputer technology, there is now a totally new way of performing computing and managing information in organizations. Today, information users, simply known as end users, can perform a full range of information processing with their desktop microcomputers, in a very timely and effective fashion, without relying on their centralized systems.

It has been estimated that by the end of this decade there will be more than 10 million microcomputers used in U.S. businesses (Business Week, 1984; Guimaraes, 1986). Furthermore, Strassman (1985) projects that over the next fifteen years the number of microcomputer work stations in offices world-wide will increase to 200 million. This substantial increase in the number of microcomputers will create a significant phenomenon in information processing and management (Benson, 1983). One can argue that with the dramatic surge in the use of microcomputers in the past few years, many of these previous projections can be considered to be a simple underestimation of the potential growth of this technology. In support of this argument, Manzi (1989) forecasts that by 1990 there will be a microcomputer for every three white collar workers, with company payrolls predicted to include more than 50% white collar workers (Khosrowpour, 1988). Now, in the beginning of the 1989, personal computing is already considered to be a fact of life in U.S. businesses.

Information management for the 1990s increasingly stresses flexibility, performance, and standardization in both hardware and software within microcomputer technology. These new directions allow end users in the business world to utilize this technology in support of the strategic, tactical, and operational functions of the organization. In the 1990s, microcomputers will increasingly provide the "glue" which links customer and vendor, supplier and users, managers and employees in organizations.

This article focuses on the strategic value of microcomputers and discusses various opportunities that businesses could have in the effective utilization of this technology.

Assessing the Situation

Early in this decade there was only one telephone company, a bar code was something concerning taverns, and microcomputers were sold as kits to be assembled at home by electrical engineering hobbyists. Today, there are dozens of telephone companies, bar codes appear on every manufactured retail product, and microcomputers are common business tools. Rapidly evolving in hardware and software maturity during the past five years, microcomputers have survived many doubts and criticisms regarding their limited computing and storage ability.

In the 1980s, tremendous technological changes in microcomputer technology occurred concurrently with such factors as increased large city traffic congestion, increased real estate rental costs, raised expectations about product quality and customer service levels, integrated supplier-customer relationships, and demands for more active employee involvement in the management of organizations. The tremendous advancements achieved in the telecommunication industry linking autonomous systems together have contributed to the acceptance of microcomputers as a potential tool for facilitating organizational communications and computing functions.

With the cost of computing drastically dropping in the past decade (Applegate, Cash, & Mills, 1988; Lay, 1985; Malone, 1985; Mautz, Merten, & Severance, 1984; Raymond, 1983) and the availability of significantly more advanced microcomputers with higher perform-