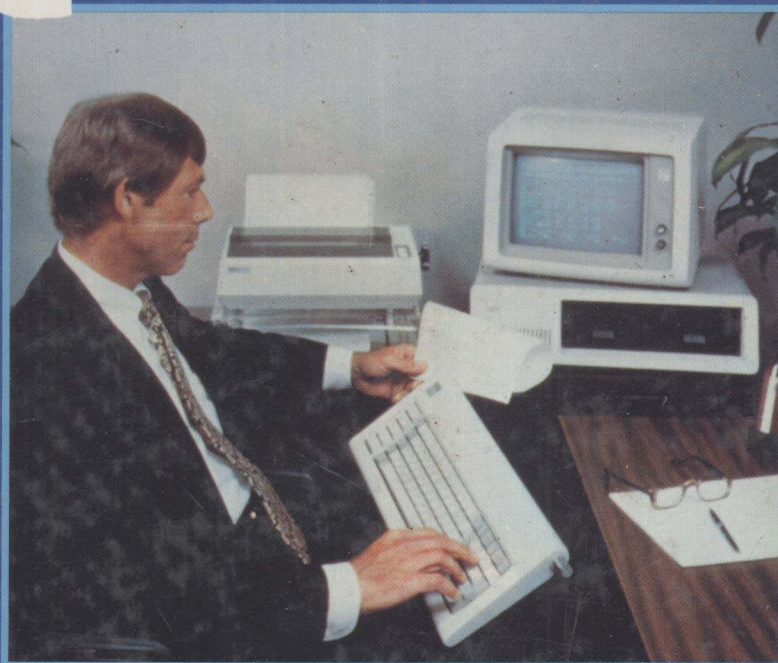


Comprehensive coverage
of hardware, software, and design,
with tutorials for dBASE II,[®]
WordStar[®], and VisiCalc[®].

USING SMALL BUSINESS COMPUTERS



D.G. DOLOGITE

USING SMALL BUSINESS COMPUTERS

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INTRODUCTION

Using Small Business Computers provides business people and students with a working knowledge to use small computers. While it covers expected background and orientation material, its main focus is on the business “applications” of small computers. Applications are computer programs that perform user tasks, such as word processing and accounts receivable. They are the reason businesses and individuals buy small computers.

Step-by-step tutorials for “hands-on” experience with electronic spreadsheet, word processing, and database management applications are included. For readers without a computer or these applications, the tutorials simulate a “you are there” computer experience, from “power-on” to “power-off.”

One-half of the book is devoted to specific business applications. The probability is very high that any business person will use from one to all of the applications covered.

The evaluation checklists that are included encourage a systematic approach to acquiring applications. They also help pinpoint application strengths and limitations.

A concluding case study designs a small computer application from scratch using an established design methodology. The methodology can be used to translate original application ideas into final working programs.

The book grew out of a need for an applications-oriented source of information for students in my Small Computers for Business course. From over fourteen years

of small computer experience, I became aware of what students of small computers could most profitably study. During this time, the systematic procedures, checklists, and other materials that appear in this book were developed and industry tested.

Because computers and applications change so fast that descriptions of specific products can make a book obsolete before it is published, an effort has been made to keep the content as product independent as possible. With the tutorials, this is impossible. So representative products are used, knowing that they may be superseded in time.

The systematic approach to the use of small computers advocated, nonetheless, has been valid in the past and will continue to be valid as long as individuals and businesses use computers.

D. G. Dologite

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PART



understanding small business computers

Successfully using small computers in business environments comes from understanding their capabilities and limitations. Part I provides an orientation and background for understanding small computers.

Chapter 1 examines how users have implemented small computers in various work environments. It provides a perspective on ways to configure small computers to suit different work situations. Chapter 2 then examines the hardware that goes into making up a given configuration. Hardware capabilities, limitations, and trade-offs are considered.

The next two chapters describe computer programs that computerists call *software*. Software that makes the hardware work—computerists call it *system software*—is covered in Chapter 3. Software that users work with, like word processing or accounts receivable, is called *application software* and is discussed in Chapter 4.

The chapters in Part I help develop an understanding of the user-computer working relationship. Maintaining a successfully functioning system depends on it.

Part I concludes with Chapter 5 which brings earlier chapters into perspective. A selection methodology capstones the systematic approach to computer hardware and software evaluation covered in previous chapters.

USES AND USERS

Small business computers are probably the most significant productivity tool of our time. In the coming years, business professionals who do not harness their capability will be functioning at a disadvantage.

Innovative small shops and independent professionals can use powerful small computers as easily and cheaply as large companies. The small computer has eliminated the office technology gap that formerly was inherent in size.

This chapter explores how business professionals use small computers. It looks at single-user as well as multiuser environments. Communications over newer local area networks, as well as older wide-area networks, are reviewed. Terminology essential to functioning in these areas is introduced as needed.

A section on sources of information helps one to get informed and to keep informed about the business use of small computers. Other sections on specifying requirements and acquiring a computer conclude the chapter.

Through each section one thing becomes clear. The most important ingredient of all is the end-user, the businessperson sitting in front of the TV-like display and keyboard. The single-user environment is the fundamental building block of all other environments.

Unlike the old days, which is little more than twenty years ago, computer use

was dominated by the large central computer. Individual users were appendages of its power. That trend is reversed. End-users have their own data processing power with personal small computer workstations. Figure 1-1 compares one of today's small professional workstation computers with its predecessors. It shows that the sibling is even more powerful than its parent.

Figure 1-1 Comparison (approximate figures) of an IBM large mainframe computer of only twenty years ago with an IBM small computer of the 1980s

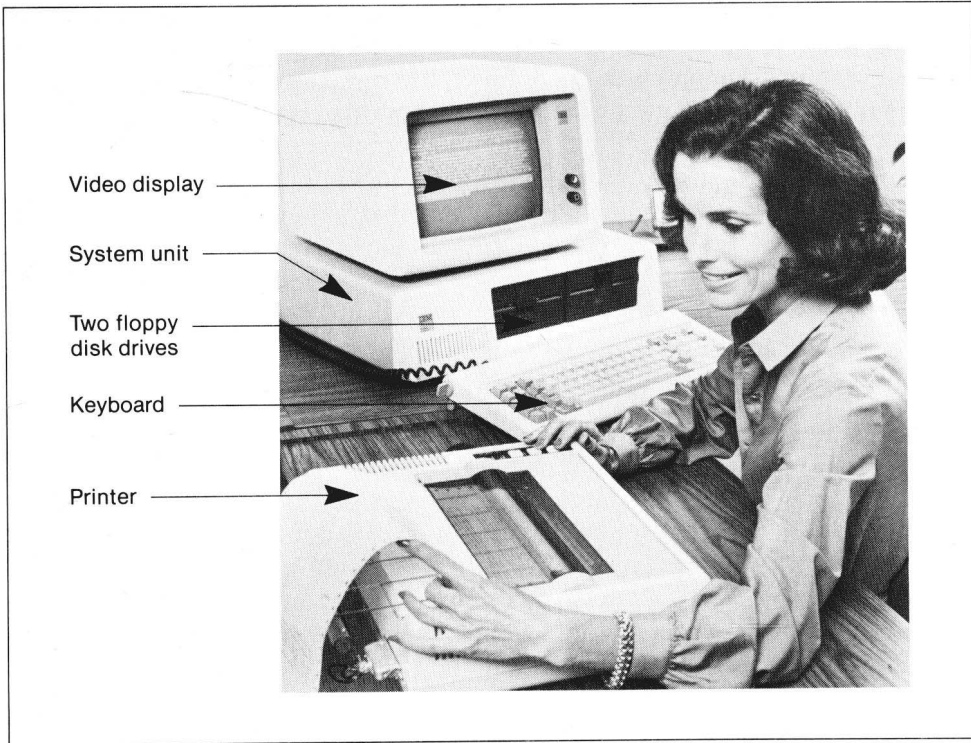
IBM COMPUTERS

Computer Name	IBM Personal Computer	System 360
Computer Type	Microcomputer	Mainframe computer
Dates in Use	1981-present	1964-early 1970s (and some still in use)
Minimum:		
Memory (characters of storage)	16,000	8,000
Cost	\$1,500	\$133,000
Maximum:		
Memory (characters of storage)	1,000,000	524,000 (Model 70)
Cost	\$10,000	\$5,500,000
Environment	Desktop	Environmentally controlled room with raised floor for cabling, constant air cooling, and special fire protection system

COMPUTER DISTINCTIONS

In this book, small business computer means one that gives users computer power without dependence on computer experts. In terms of current computer technology, it refers to a desktop microcomputer. Office automation designers refer to it as a "general-purpose workstation," such as the one in Figure 1-2. In this book, the terms "small business computer," "workstation," and "microcomputer" will all mean a professional-level desktop microcomputer, such as the one specified in Figure 1-1 and shown in Figure 1-2.

Traditional technical classifications are *microcomputers*, *minicomputers*, and *mainframes* or large computers. It used to be easy to tell one from the other. They were classified by something called *word size*, the width (in "bits") of one instruction processed (covered in Chapter 2). The chart in Figure 1-3 shows how, by 1980, this distinction became blurred. Second-generation microcomputers had minicomputer word sizes and could perform like large computers of the 1960s. Simultaneously, minicomputers were assuming mainframe roles.



Courtesy of IBM

Figure 1-2 This typical small computer professional workstation is the IBM Personal Computer

Computer Word Size	Computer Type		
To 60 bits	Large mainframe computer	Super mini and large computer mainframe	
To 32 bits	Super mini	Mini and scientific micros	
16-bit	Mini	MICRO (second generation)	
8-bit	MICRO (first generation)		
	1975	1980	1985

Figure 1-3 Computer performance

Of the three, only microcomputers are designed to be used by one user as a self-sufficient workstation. This *stand-alone* use separates it from the other two.

Both minicomputers and mainframes are designed for multiuser use, as Figure 1-4 shows. Users have no computing power except that made available to them from

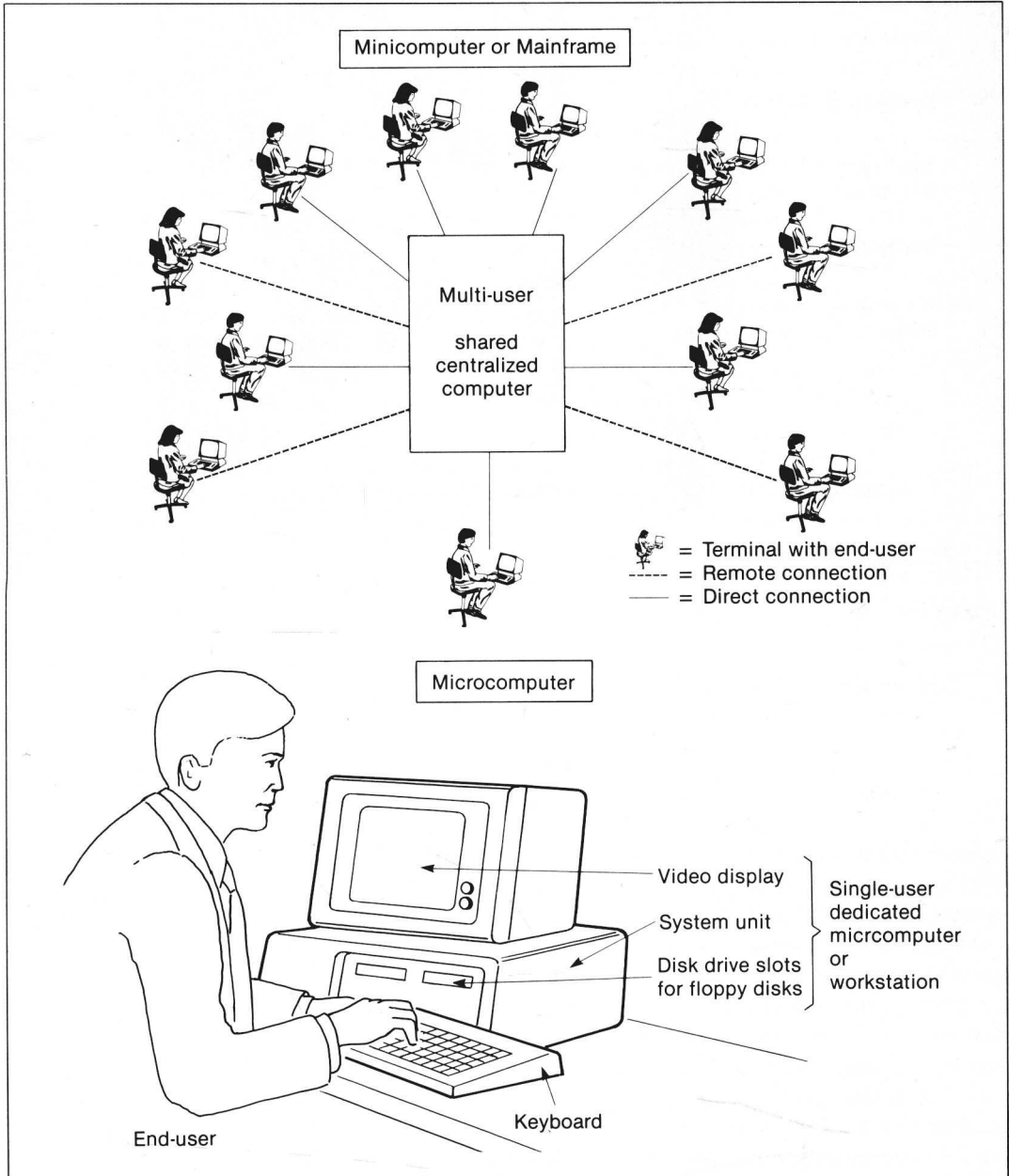


Figure 1-4 Comparison of a single-user microcomputer and a multiuser minicomputer or mainframe