FINAL REPORT
Project A-3360-000

OPERATION OF THE
MINORITY BUSINESS DEVELOPMENT AGENCY
RURAL ASSISTANCE PROGRAM

By
Frank B. Brown
Program Director

Arthur L. Brown
Project Manager

October 1, 1983 through November 30, 1984

Under
Cooperative Agreement #04-10-82032-01

January 1985

GEORGIA INSTITUTE OF TECHNOLOGY
A Unit of the University System of Georgia
Atlanta, Georgia 30332
OPERATION OF THE MINORITY
BUSINESS DEVELOPMENT AGENCY
RURAL ASSISTANCE PROGRAM
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INTRODUCTION

General
In October 1982, the U.S. Commerce Department's Minority Business Development Agency (MBDA) appropriated funding for the operation of a Rural Assistance Program (RAP). Developed initially as a pilot project, RAP provided management and technical assistance services to minority-owned businesses located outside major metropolitan areas.

The MBDA awarded four rural assistance contracts to cover rural and smaller metropolitan areas in the Atlanta, Dallas and San Francisco regions. The Alaska RAP provided coverage for that entire state.

In the Atlanta region, a cooperative agreement was signed with the Georgia Tech Research Institute (GTRI), formerly the Engineering Experiment Station, to deliver a wide range of services to program recipients located in a five-state servicing area. As a matter of convenience, clients were not required to visit the RAP center. The GTRI staff provided assistance primarily through visits to the client's location.

The Rural Assistance Program was officially terminated at the end of November, 1984 because of budgetary problems at MBDA.

Geographical Territory
The Atlanta Region's Rural Assistance Program provided assistance to minority-owned businesses located in those areas of Alabama, Georgia, Mississippi, North Carolina and South Carolina not served by Minority Business Development Centers.

Some 3.5 million (60% of the 5.8 million) minority persons reside in the territory served by RAP. Of this number, nearly 2.9 million live in sectors populated by less than 50,000 persons. Exhibit 1 shows (a) the total minority population in each state in the Atlanta Region; (b) the portion serviced by MBDCs; and (c) the minority population in areas covered by RAP.
Services Provided
A wide range of assistance was available to clients in RAP's geographical territory. Through a project team approach, GTRI personnel provided management and technical assistance in several areas, including:

- financial management
- accounting services
- management systems
- advertising and promotion
- product development
- business computer selection
- financial packaging
- engineering studies
- production management
- market planning
- segmentation studies
- pricing strategies
- marketing research
- business planning
- feasibility studies

In addition to management and technical assistance, clients received the direct benefit of brokering services designed to identify capital resources, contract procurements and new business opportunities.

For those persons who did not require direct assistance and those that could benefit most from the assistance of other providers or agencies, RAP maintained a referral service.
Minority Population Statistics
Southeastern United States

<table>
<thead>
<tr>
<th>State</th>
<th>Population (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td></td>
</tr>
<tr>
<td>GA</td>
<td></td>
</tr>
<tr>
<td>MS</td>
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<td>NC</td>
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<td>SC</td>
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<tr>
<td>FL</td>
<td></td>
</tr>
<tr>
<td>KY</td>
<td></td>
</tr>
<tr>
<td>TN</td>
<td></td>
</tr>
</tbody>
</table>

- Total
- MBDC
- RAP
PROGRAM IMPLEMENTATION

Control Systems

Similar to other programs of management and technical assistance, the successful operation of the Rural Assistance Program was heavily dependent upon the ability to attract and serve quality clients and projects within the target area.

Because of the widely dispersed population, the diversity of needs, and the differences in economic and social resources, the program directed special attention to the careful selection of clients. Program Management developed a number of control systems to assist in the identification, selection and servicing of the most viable candidates. Centered around a pre-established Client Priority Profile, those systems included:

- Outreach - program structured to broadly publicize the services available through the Rural Assistance Program. Information was disseminated through seminars, workshops, conferences, news media, mailings, and individual referrals.

- Client Intake - designed to allow the selective servicing and priority classification of work assignments and the maximum leveraging of program resources. This system included forms, policies and procedures that greatly simplified administrative requirements of the program.

- Project Implementation - requirements for a delivery system necessitated the development of a procedure for assigning personnel and providing quality service. The project team approach proved to be both practical and efficient in providing the appropriate expertise at a manageable price and time frame.

- Program Administration - provisions for overseeing the entire program and meeting total objectives included administrative coordination; insurance of proper service; generation of outreach activities; control of program resources; timely completion of reports; and other requirements set by the Minority Business Development Agency. Other portions of the system were designed to help leverage program funds and to provide client access to information and data bases.
Performance Measurement/Reporting - this system was used to help establish and track goals, objectives and accomplishments through a time-phased performance plan. The reporting system required a method of documentation and filing to allow reporting of performance measurement results, problems/recommendations, success stories, brokering activities, leveraging actions, networking/advocacy functions and other significant accomplishments.

Program Adjustments - this system was developed to maintain continuous monitoring of program performance and the quality of results. Other adjustment factors included the distribution of client loads within the territory; types of project assignments scheduled; type of business clients accepted; changes in revenue and employment levels; and types of outside resources used.

Exhibit 2 illustrates the program work flow and shows the progression from intake through implementation. The results of this process were:

- better prepared, higher quality clients with a higher probability of successfully absorbing the assistance rendered;

- more efficient operations based upon leveraged resources and more timely feedback on program results; and

- more easily defined efforts to match clients with procurement opportunities.
ACCOMPLISHMENTS

Outreach Activities
During the contract year, RAP staff actively publicized the program, identified public and private sector sources of procurement opportunities and matched resource providers with a roster of appropriate clients.

Among their activities, staff members participated in 20 seminars and/or conferences, maintained a continuous dialogue with more than 70 providers of economic or business development services and initiated direct contact with nearly 200 sources of procurement or contract opportunities.

Outreach activities generated more than 400 inquiries and requests for assistance.

Program Statistics
Minimum performance requirements were included in the time-phase performance plan developed by MBDA for the Atlanta regional program.

The agency stipulated six categories of measurement in the cooperative agreement signed by Georgia Tech. These included target figures for number of new business starts, business expansions and existing businesses saved, as well as dollar targets for financial packages approved and contract procurements.

Several other target areas included in statistical reports were not part of the signed agreement. Statistics were reported for the number of new firms added to the PROFILE system, number of PROFILE verifications, number of financial packages approved, number of contract procurements secured and number of hours of management and technical assistance provided by staff members.

Among program statistics reported, there were:
- 63 new client assignments submitted;
- 16 new business starts;
- 15 expansions of existing businesses;
- 8 distressed businesses assisted;
- 18 PROFILE submissions;
6 financial packages approved;
financial packages approved with total value of $807,000;
31 contract procurements secured;
$5,657,636 in contract dollars obtained on behalf of clients;
1,871 hours of direct assistance provided by staff.

Firms with employees (28) indicated a total employment of 481 people, an average of 17 employees per company. Gross revenue reported by those firms with gross revenue in 1982 (33 firms) totaled $17.93 million, an approximate receipt of $543,000 per company.

Thus, the $200,000 invested by MBDA in RAP to assist rural firms cost less than $420 per job maintained. The $17.93 million in gross revenue from these firms represented a return of $89.70 per MBDA dollar invested to help maintain these businesses.

CLIENTS ASSISTED PREVIOUSLY

The following are representative of those clients helped through the Rural Assistance Program.

**MOP, Inc.**
The principals of this newly created, Dublin, Georgia, electronics manufacturing firm requested assistance in determining the marketing and financial feasibility of a printed circuit board facility. The RAP personnel conducted a market research study, developed financial statements, provided general counseling, and initiated contract solicitation efforts on behalf of the firm.

**Choctaw Tribal Council**
This Philadelphia, Mississippi band of Choctaws was assisted in determining the feasibility of constructing a retail shopping center on their reservation. The 5,000-member tribe, the only federally recognized Indian tribe within RAP's operating region, had a net outflow of $24 million per annum. This project was part of the Choctaws' self-help determination efforts that have increased employment at reservation-based facilities from one employee in the early 1960s to 954 in 1983. Eighty percent of the employees are Indians. The assistance provided by RAP was an instrumental part of information submitted to a federal commission established to aid native American citizens.
**Equifund CDC**

The client requested an engineering feasibility study for setting up a vegetable/fruit canning plant in Alabama. The project officials required this information to attract additional financing. This effort served the interests of several landowners, farmers, and a produce marketing company.

**Edwards & Associates**

This 25 year-old company received assistance in determining the feasibility of establishing a shopping plaza. The study was an instrumental part of the company's successful efforts to secure financing for developing an 18-acre tract in Garysburg, North Carolina.

**Culpepper's Supermarket**

This Thomson, Georgia supermarket, in operation since 1969, was suffering a 3-year decline that reduced sales from $30,000 to $18,000 per week. The RAP personnel diagnosed the problems and recommended pertinent resolutions.

**Allen Welding**

Mr. Allen's metal fabrication shop was in danger of losing several new contracts because of inadequate financing and operating inefficiencies. The client requested aid in reviewing, evaluating, and revising a loan package for submission to a local state bank. Help was provided in developing a business plan and in assessing the firm's equipment needs. Mr. Allen, successful in securing financing, was able to continue work on his contracts.

**D & D Specialty**

Located in Union, South Carolina, D & D manufactures custom steel frames for hollow metal doors used in office buildings, hospitals, factories, schools, and other facilities. The company received assistance in restructuring its existing debt, securing an infusion of new capital, soliciting contracts, and maintaining its equipment.

**Consolidated Industries**

The RAP performed a marketing study on a product intended to automatically test cable wiring harnesses and cable assemblies at the flip of a switch.
This Huntsville, Alabama Department of Defense contractor initially solicited assistance from Georgia Tech's Technology Utilization and Commercialization Center, which favorably evaluated the new product.

The study determined a need and a marketing niche that Consolidated could fill. The prototype is being built now for ultimate marketing to aerospace contractors, the military, automobile manufacturers, and other potential users.

Additional RAP assistance included procurement brokering and a study on mass soldering techniques and equipment for printed board manufacturing. The study was part of efforts to evaluate certain equipment and state-of-the-art techniques necessary for manufacturing printed circuit boards.

**Others**

RAP's roster of clients includes an impressive array of new and established firms, representing a wide diversity in terms of types, skill level, work force, and revenue level. Among these are:

- health fitness centers
- wholesale grocers
- retail & wholesale gift shops
- test equipment manufacturer
- roofing & painting contractors
- a radio station
- meat processing plants
- industrial hardware merchandise
- a host of retail operations
- electrical contractors
- carpet manufacturers
- chemical processors
- electronic components manufacturer
- fisheries
- agricultural cooperatives
- vegetable processing plant
- poultry farms
- a variety of manufacturing, service, and construction clients
Compared to time-phase performance requirements, the Atlanta RAP reached 77 percent of its overall goal. A comparison against individual goals showed:

<table>
<thead>
<tr>
<th>Goal Description</th>
<th>% of Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of business starts</td>
<td>89%</td>
</tr>
<tr>
<td>Number of distressed firms</td>
<td>44%</td>
</tr>
<tr>
<td>Number of business expansions</td>
<td>83%</td>
</tr>
<tr>
<td>Dollars in approved packages</td>
<td>45%</td>
</tr>
<tr>
<td>Dollars in contract procurements</td>
<td>106%</td>
</tr>
</tbody>
</table>

In addition to the client-related assistance discussed above, RAP staff prepared two documents to specifically assess the needs of minority-owned businesses located in the Atlanta region. These documents compared the Atlanta MBDA Region to others and recommended changes beneficial to minority-owned businesses and rural communities. These findings were offered to MBDA as a rationale for continuing a rural initiative in the region. A copy of this rationale was included in the second quarterly narrative as an appendix.

The RAP also provided assistance with specialized studies that proved invaluable to clients. An example of these reports is included as Appendix I. This task resulted in assistance to a small real estate firm involved in sales and rentals in Macon, Georgia. Its conclusion resulted in the client business' introduction to "the new information age". Subsequently, several other firms received assistance in improving their competitive positions by using computers.
APPENDIX I
SELECTING A SMALL COMPUTER FOR REAL ESTATE OFFICES
SMALL COMPUTERS FOR REAL ESTATE OFFICES

Small individual and multiuser computers are a rapidly developing technology which has direct application in many small businesses and industries. Among smaller firms where owners and managers often wear many hats, there is not time for these managers to keep abreast of rapid changes in a number of different fields. This report is designed to assist the manager or owner of a small real estate firm in understanding some options available to him in the utilization of a small computer in his firm to improve his productivity. A few system cost examples have been included to give some idea of the cost of these options. Small computers have direct applications in five general areas of the small to medium real estate office operation. These applications include:

**Accounting**
- including payroll and associate expense tracking and budget analysis.

**Marketing**
- including generation of "personalized" form letters, mailing list upkeep, and sales analyses.

**Electronic Multilists**
- particularly in major metropolitan markets.

**Client Support Functions**
- including loan analyses and comparative costs, buyer/seller matching, tax and growth analyses, and loan qualification.

**Property Management**
- for rental properties.

At the outset an initial decision must be made based on how many people will need access to the computer at one time. As you proceed further in evaluating your real needs versus cost, this decision will become very apparent. In general, if your needs can be met by one-person access at a time, then this indicates a personal size computer like an IBM-PC, Zenith Z100, or TI-Professional. If you foresee a short term need (2-3 years), for two to eight people to use the computer at one time then a multiuser supermicro is indicated. Examples of this type computer are Northstar, ALTOS, Molecular Computer, and Alpha Micro.
The recommended procedure is to pick the software that effectively fills your needs and then select an appropriate computer to run that software. We will discuss a selection procedure in more detail later, but the first step in that process is to learn a little about small computers. You are beginning that process here. Other steps you might take involve perhaps spending some time at a computer store, purchasing a very small home computer to learn some computer basics, or taking a computer course at a local college or vocational-technical school.

As you begin to learn a little about small computers, you will explore several generalized programs. These programs (various "electronic spreadsheets", word processors, and communications programs) are generalized because they apply to many small businesses and can be used to perform a variety of tasks from communicating with other users to electronic bulletin boards to maintaining mailing lists to forecasting sales and budgets.

Specialized applications programs which also perform the tasks first mentioned in this article will be discussed briefly along with examples of several actual programs.

SOFTWARE PACKAGES

Accounting Packages

There are numerous accounting packages which can be used by small real estate firms. Some packages have been written specifically for real estate firms. The difference generally falls into the category of whether or not accounts are preset for such things as commissions receivable or commissions payable and how effectively the programs adjust for such things as prepaid expenses, etc. Many accounting packages not written specifically for real estate operations will work just fine. These packages are purchased in modules as follows: general ledgers (GL), accounts payable (AP), accounts receivable (AR), payroll (P), and inventory (Inv.). The packages will generally stand alone (that is will operate without any other packages), but an important feature that is recommended for
real estate operations is that the various modules can be integrated. That is, for example, can data from accounts receivable be posted to the general ledger without rekeying the data, and will changes in the inventory of property held for resale be automatically posted to general ledger? Many early programs did not do this and thereby defeated a major advantage of using the computer. This may still be a problem if you purchase a specialized package from one vendor, say property analysis, and accounting from another vendor. Check with your vendor before you buy to insure compatibility.

Quality general ledger packages produce the following type of reports:

Chart of Accounts  - Some handle with or without balances. Most are customizable.

Journal Listings  - A list of posted transactions by journal. A chronological record.

Posting Summary  - By account.

Trial Balance

Balance Sheet  - Listing assets and liabilities. Some packages show comparative data.

GL Report  - Showing each account with opening balance, current activity, and closing balance.

Operating Statements  - May be by department - to record profit and loss statement. Often accompanied by a percentage breakdown for each item. Many packages offer comparative statements allowing month-to-month or year-to-year comparison of operations.

Account Summaries  - Used to review detailed account expenses, income, assets, and liabilities.
Some of the things you may want to check in a GL program include:

- Maximum number of accounts?
- Number of digits in account?
- Double entry system?
- End of period processing?
- Subaccounts?
- Ratios on financial reports?
- Account inquiry?
- Transaction register?
- Cash disbursements and receipts journal?
- Trial balance and balance sheet?
- Depreciation schedule?
- Cash report?
- Month-to-month and year-to-date report?
- Interface with AR, AP, inventory, payroll?

An accounts payable program records invoices and processes payments quickly and accurately. They often make available detailed information including year-to-date purchases, prior year purchases, and contact persons for each vendor. Better packages provide discount reports to prompt you about available discounts. Cash requirements reports show planned cash needed for each day to aid in cash flow management. Often aged trail balances are automatically computerized. Important questions include whether or not both open item and balance forward accounts are handled. An important audit feature is a monthly check register showing checks printed during the month.

Accounts receivable programs handle customer accounts in very much the same manner as AP programs handle vendors. Sales data is entered and appropriate entries are made in various accounts and journals.

Better programs provide easy maintenance of customer files and can be interfaced with word processors for mailing list use. Payments and credits are entered and recorded as in other programs and are automatically posted to the proper ledgers at the end of period processing. Aging reports and transaction listings are common.
Things you may want to look for in AR and AP programs include:

Maximum number of customers/vendors?
Maximum number of invoices/vouchers?
Customer billing?
Sales/receipts entry and posting?
Customer information update?
Sales analysis?
Balance forwarded?
Open item accounts?
End of period processing?
Discount dates, carrying charges?
Returns and allowances?
Inventory interface?
Aged accounts?
Cycle billing?

Payroll recordkeeping is often the first packaged software purchased. These packages input time and/or sales data and compute gross pay; net pay; deductions; and federal and state withholding. They automatically print checks and check registers and post to appropriate accounts. Most programs also automatically generate 941's and W-2's.

Some questions to consider in packages include:

Uses your type payroll?
Handles regular, overtime, shift pay? Bonuses?
Pay periods match?
Maximum number of employees?
Tax calculation, tax table maintenance?
Allowance for manual checks, voided checks?
Attendance, withholding, government reports?
Employee file maintenance?
GL interface?
Labor reports?
One time deductions?
Inventory recordkeeping for small real estate firms is oriented primarily toward property held for resale, office furniture and fixtures, rental property, and other equipment. Some questions to consider in inventory packages include:

- Maximum number of items?
- Multiple price levels?
- Receiving entry?
- Credit and returns?
- Adjustments?

When small real estate firms use a computer to aid in marketing, they most often utilize either an explicit market program or a word processor with perhaps a spelling checker and mail list merger. Word processors allow firms to generate letter perfect documents, to automatically and repeatedly generate letters, and even to merge them with mailing lists to generate "customized" form letters.

WORD PROCESSING SYSTEMS

Among the most important word processing features are the following:

<table>
<thead>
<tr>
<th>Features</th>
<th>Functions/Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic title and page numbering</td>
<td>Automatically prints page numbers with headers and footers on multipage documents. Reduces repetitive keystrokes and increases throughput of large documents.</td>
</tr>
<tr>
<td>Document assembly</td>
<td>Allows operator to assemble standard paragraphs, sections, or pages into a new document. No need to retype commonly used text. Produces documents in a fraction of the normal time.</td>
</tr>
<tr>
<td>Global hyphenation</td>
<td>Scans an entire document to allow hyphenation decisions. Perfect copy on the screen before printing produces professional looking documents and saves time.</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Global Replace</td>
<td>Gives the operator the option of automatically replacing a defined character sequence with another throughout a document. No need to manually replace every instance of a word or phrase.</td>
</tr>
<tr>
<td>Global Search</td>
<td>Searches for and highlights every instance of a specified character sequence in a document. Saves a great amount of editing time.</td>
</tr>
<tr>
<td>Powerful editing</td>
<td>Insert or delete characters, words, lines, paragraphs, or entire sections of text quickly and easily. Eliminate time consuming retyping because of minor or major changes.</td>
</tr>
<tr>
<td>capabilities</td>
<td></td>
</tr>
<tr>
<td>Replace</td>
<td>Searches to a defined character sequence within a document and allows the operator to replace it. This flexible editing feature saves time.</td>
</tr>
<tr>
<td>Text Copy</td>
<td>Copies portions of text from one location in a document to another, or from another document. Easily duplicates sections of text. Saves time and effort.</td>
</tr>
<tr>
<td>Text Movement</td>
<td>Moves portions of text within a document or from another document. Changes sequence of text quickly without retyping. Increases typing productivity.</td>
</tr>
<tr>
<td>Spelling Checkers</td>
<td>Proofreads documents to check words against a sorted dictionary to reduce editing time.</td>
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</tbody>
</table>
Some specialized packages have been written to provide marketing assistance to small real estate firms. These packages produce information similar to the following:

Sales reports - to summarize the activity of firms, offices, associates, and co-op brokers. These reports often allow year-to-year comparison.

Potential reports - to project potential revenue from existing listing inventory. These reports help set budgets for advertising, office, and other expenses.

Associate commission reports - in terms of sales per period, commissions and sales pending.

Profitability reports - to measure contribution by associate to company sales dollars and to relate that performance against costs.

Sales by market area - an analysis by geographic area of sales activity.

Sales transaction directories - buyer printouts, seller printouts, market area printout, co-op printout, office printout, associate printout, and prospect printout.

A related function to the marketing efforts discussed previously is the ability to access various area-wide listing services. For example, in Georgia metropolitan areas two electronic media listing services are available. These are Redi Data - operated out of Miami, FL and Metro-Multilist from Decatur. In this instance, the real estate firms with their own computer (and using a communications program and a "modem") would call the data bank via telephone and transfer current data to their own computer for rapid update and analysis. There are also electronic yellow pages, listings, and various national data banks on a wide variety of subjects.
In the area of industry specific software the primary applications are in client support functions, such as loan analysis and comparative costs (designed to appraise new listings and assist potential purchasers in evaluating their investments). Some specific applications which are available for real estate offices are listed as follows:

Loan Qualification - Assists the agent in asking awkward questions, about the buyer's income for instance. Once the buyer's loan qualification is known (FHA, VA, or conventional) the agent can help select the most attractive, yet realistic, home to show. This also helps prevent a sale from falling through when a buyer applies for, but cannot qualify for, financing. This type application can also help clarify for sellers what type of prospect it will take to buy their home.

Tax and Growth Analysis - To show progressive equity buildup, tax benefits, and the effects of appreciation. Assists in supporting the economic logic of buying.

Loan Analysis - Includes amortization schedules.

Comparative Data - Searches previously stored data on similar properties (often 10 or more characteristics per transaction) to select similar sales for use in appraising properties and showing buyers and sellers that the price is not out of line.

Buyer and Seller Matching - Allows storage of details of your listings, followed by multilistings and by the specific needs of prospective buyers for rapid matching.

Forms Generation - Many packages have a capability to print standard forms and merge this information with purchaser data to rapidly print purchase agreements, estimated closing costs, and others.
Finally, for those firms which manage rental property there are many property
management programs. These programs track rent, deposits, credits, late rent,
balance due, number of keys issued, car license numbers, lease dates, rent
increases, vacancies, names, addresses, phone numbers, and other things like
repairs, maintenance, utilities, and advertising.

When unusual conditions exist, some programs allow specialized accounts such as
pet deposits, reserved parking, and storage. Some areas of concern to investi-
gate on a package by package basis include the number of properties permitted,
the number of units per property, that all of your required type charges are
permitted, that the program does or does not interface with a standard account-
ing package, or that sufficient provision is made to store information about
specific tenants and specific units (things like emergency numbers, induce-
ments to rent, family size and notes like 1 bedroom/2 baths single, fully
furnished, refrigerator, etc.).

SOME EXAMPLE PROGRAMS AND THEIR LIST PRICE (Jan. '84)

ACCOUNTING

Peachtree Accounting Software
Peachtree Software - Atlanta, GA
GL, AR, AP, P, Inv. at $595 per module

Real-World General Accounting
Real World - Chichester, NH
GL, AR, AP, P, Inv. at $650 per module

TCS Total Accounting
TCS Software - Houston, TX
GL, AP, AR, P, Inv. at $350 per module

MICA Accounting Series
Micro Associates - Nderland, TX
GL, AP, AR, P, Inv. at $395 per module
BPI Accounting
   CL, AR, P, Inv. at $425 per module

Many others are available.

WORD Processors

Datatext word processing with mailing list
   Datatek, Inc. - Greenwich, CT $600

Rediwriter document formatter
   Rediware Systems, Inc. - West Readin, Ct $125

Writer II and Easy Speller
   Information Unlimited Software - Sausaliton, CA $350

Wordstar with Mailmerge and Spelstar
   Micropro - San Rafael, CA $845

Finalword
   Mark of the Unicorn, Inc. - Arlington, MA $300

Volkswriter
   Lifetree Software - Monterey, CA $195

COMMUNICATIONS PROGRAMS
   (for use with modems)

Smartcom II
   Hayes Microcomputer Products - Atlanta, GA $119

Asynchronous Communications Support
   IBM - Boca Raton, FL $60

PC COM I
   Rixon, Inc. - Silver Spring, MD $89
Adcom

Dynamic Microprocessor Assoc. – New York, NY $175

Communicator/Text Editor

Electronic Data Systems – Dallas, TX $125

Telecommunications

Peachtree Software, Inc. – Atlanta, GA $150

CLIENT SUPPORT FUNCTIONS

Fox Real Estate Management System $5,995

IBM – Boca Raton, FL

(requires IBM System 23)

Real Estate Sales Production System $4,000

Control Data Corporation – Atlanta, GA

(requires CD 110 micro)

NRE – Real Estate $3,690

NRE Systems – Maitland, FL

Real Base $3,300

Lee Arnold Management Systems, Inc. – Clearwater, FL

Realsoft Integrated Form System $3,990

Realsoft Systems, Inc. – Aspen, CO

PROPERTY MANAGEMENT PACKAGES

Property Management $695

Continental Software Co. – Los Angeles, CA

Apartment House Manager $395

User-Friendly Software – Melville, NY
HARDWARE CONSIDERATIONS

Once you select the software which is most appropriate for your business there are normally several brands of hardware which will run that software. Some considerations you might make include:

Terminals get information in and out of the computer. You have a choice between CRT terminals and hard copy terminals. CRT terminals combine a television-like screen display with a keyboard for input. A hard copy terminal is essentially a typewriter connected to the computer.

Unless your business is a lot different from most, you should choose the CRT-style terminals. They eliminate paperwork. They also allow instant corrections. You can display an entire form on the screen at once. While both types of terminals allow you to input information to the computer through a keyboard, the CRT terminal allows the computer to feed information back to you far more easily.

Pick a CRT that can display at one time at least 24 lines of 80 characters each. Ten or 12 lines is not enough for most business applications. Similarly, pick a CRT with a full-size screen; a five-inch screen is probably too small for business use, no matter how much data you can put on it. Small screens are fine for hobbists, but a poor choice for business.

Some systems use displays that are basically modified television sets. These units may also have poor picture quality and limited display capability and may therefore sacrifice operator productivity.
Especially after a long day's use, text display must be clear and comfortable to read. Comfort includes an aesthetic component and individual preference. Some displays are unsatisfactory for most users. The minimum number of dots needed for a reasonable typeface is 5 dots wide by 7 dots high plus 2 more dots below the baseline for descenders (the lower case p, g, q, and y)—a total 5 x 9 character matrix. A one-dot descender forces the p, g, q, and y up one line making a "bumpy" typeface that is difficult to read. Including a separator line, a screen with 25 text lines calls for 250 scan lines. Having fewer scan lines sacrifices text lines, degrades the typeface, or gives up the separator line. Designers use all three compromises.

Some computers have an alternate condensed mode of text display. By reducing typeface size and legibility, a year's worth of financial tables can be packed into one picture. But its standard characters are very small, and may users will prefer an alternate larger typeface.

The CRT terminal's keyboard should be setup as nearly like a typewriter as possible. If it's not (some with teletypewriter keyboards), operators will need to be retrained, and the level of errors and frustration will rise. A terminal with a separate calculator keyboard or numeric pad can increase productivity significantly when you're working with numbers.

Keyboards. As with the display, you will spend a lot of time with the keyboard. A good keyboard will make that time pleasant; a bad one is a burden. Detachable keyboards, now common, adapt more easily to individual work habits. Low profile keyboards with keys an inch or two above the desk surface allow more comfortable placement of hands than traditional higher keyboards. Only after typing for some time can you judge keyboard comfort and feel. While Japanese designers concentrate on high quality graphics because of their script, they usually make poorer keyboards because few Japanese type.

For better or worse, we are stuck with the QWERTY keyboard, designed not for efficiency but to avoid jammed keys on mechanical typewriters. Although every machine has such a keyboard, many differ in detail.
One problem is that a typewriter typically has 88 characters, but a computer has 94, 96, or more and so needs more keys. These rarely used keys should be placed outside the typewriter keyboard area, but many designers try to squeeze them inside by moving the backspace or carriage return key to the right.

There is only partial agreement on where to place two important computer keys, CONTROL and ESCAPE. The CONTROL key works like a second shift key; you hold it down while typing something else. Most keyboards place it on the left near the shift key. ESCAPE is a special character often used for a command; it should have its own key, usually above the TAB key.

Other keyboards have similar changes from that which a typist expects. Some have extra keys between the "Z" and left or right shift key. There is little agreement on where the "BACKSPACE" key should be.

Soft Keys. Outside the main keyboard area, all the second-generation machines have secondary keys. Function keys ("soft keys") can be defined in software for any purpose. They provide quick access to special commands, moving the text forward or backward or deleting a sentence or paragraph. For an adequate number of commands, you need at least ten soft keys, and the more the better. Keyboards which do not have separate cursor control keys are more difficult to use than those that do.

Printers. If you want printed copies of documents (and you probably do), you will need a printer. A few years ago, all printers were expensive, noisy, and needed an operator. Today, there are inexpensive, smaller machines better suited to small business applications. There are three different basic types of printers to consider. Your choice will be determined largely by your applications and personal preferences.

Letter-Quality Printers. Letter-quality printers are generally slow (they print 25-60 characters per second) and expensive, but, as the name suggests, they deliver pages that look as though they came off a typewriter. A letter-quality printer may be the best choice for word processing applications, for reports that go to clients, or for sales letters.
Inexpensive Printers. Generally costing under $1,000, these printers are faster than letter-quality printers (50-100 characters per second), and print in an 80-column wide format with fair quality. Some are available in a 132-column format, but they achieve the higher column count simply by squeezing 132 columns into the same space normally occupied by 80, sacrificing print quality. There's also a limit on how hard you can drive an inexpensive printer. They are not designed to run for several hours straight. If print quality is not a problem, and if you have a limited amount of printing to do each day, then a basic, low-cost printer will get the job done for the lowest cost.

Heavy-Duty Printers. If you need better print quality, or if you need a printer that's designed to work 8 hours a day, you will need a heavy duty printer. Heavy duty printers are considerably more expensive and faster (75 to 150 characters per second) than the alternatives. They usually print in a 132-column format, the best format for most business reports.

Before picking a printer, figure out if you need any special forms. Can you use continuous forms, or must forms be sheet-fed? Do you need multipart forms? Can they be tractor-fed? Go over these requirements carefully, in the end, they make the decision for you.

FINDING OUT WHAT YOU NEED

How should you proceed? The first thing to do is to organize your own thinking. There are three basic steps. Step 1 is problem identification. Step 2 is requirements analysis, and Step 3 is feasibility assessment.

You should be able to explain to a computer vendor what you want the computer to do for you. This will save a lot of time (and possibly money as well), and you will wind up with a machine and software that is better suited to you and your operation.

Your business is both standard and unique at the same time. It is standard from the viewpoint that your business receives and disburses cash or credits and it receives and dispurses assistance. However, there are some parts of
your business that you run quite differently from every other office in the world. Therefore, you need to know how much of your business is standard so that you can use prepared software programs as much as possible, but at the same time you need to be aware of how much of the business is unique.

Problem Identification. In order to deal with a problem, especially a complex problem, give it a name. That makes it much more tractable. Write down everything that you want the computer to do for you, including some of the things that you might think might be overambitious and everything that you think might be too trivial for the computer to tackle. Ask each of your associates to do the same thing. Ask them to say why they want the computer and what they could do with it if they had it. To give them useful guidance, suggest to them that they stay strictly within the limits of their area of responsibility.

Even if you never buy a computer, it will be extremely helpful to you to analyze the various "systems" within your business. You may find out some very interesting things as a result. To help you in assessing data processing and how it can aid your business, it will be necessary to write down a few things.

Take each and every functional area within your business and label it. Although each area or potential application will be different for different businesses, such a list might include:

- receipts and disbursements
- accounts receivable and billing
- accounts payable
- inventory control
- budgeting
- customer mailing list
- payroll

For each of these activities now draw a "flowchart" of how information and data flows from one function to another.
Requirements Analysis. Having identified the problems that the computer might tackle, the next thing to do is to get rigorous. Determine sizes, priorities, and costs. Write down how many items must be handled. This is volume, the parameter of size or volume. This kind of information will be vital later on when you attempt to do benchmarks to find out how fast a computer you need and also how large the storage disks will have to be.

In order to do this for each transaction on your flow chart you will have to determine the frequency that an event occurs, either by the hour, day, or week. You will also need to start writing down specific numbers. How many invoices? How many purchase orders? How many line items of inventory? The purpose of this kind of detailed study is to help the company identify those areas best suited to computerization and to clarify requirements.

If the company decides to use computers, the information above will be valuable to vendors in the selection and design of the computer system.

The study's purpose is to decide whether electronic data processing is worth a substantial investment in time and money. The following points should be considered:

- Can worthwhile savings be generated by simply automating such functions as accounting, billing, or payroll?

- What new information could help the business operate more efficiently and economically?

- Can these new types of information be developed by collecting, reorganizing, and processing available data? (If not, then even the most sophisticated data processing techniques won't be able to solve your information problems).

- Can needed data be collected more efficiently and accurately by manual or automated methods?
How frequently would the company use the new types of information generated by a computer? What are speed requirements when information is requested?

Review the effectiveness of the current information system. Evaluate all forms being used to record data and all pertinent company reports. Analyze all company functions such as inventory control, accounts receivable, and payroll from a systems perspective.

Such functions are typically analyzed in terms of transaction frequency, volume, and anticipated growth. Determine the output of information required. What reports, invoices, and schedules are needed? Output reporting must be defined in terms of nature and frequency of information. The timeliness and accuracy standards must always be defined.

Determine the input data required. Note exceptions such as special order forms. What are the number of transactions needed per time period? Will there be weak or slack periods? What are the sources of input data? What specific operations are necessary to convert input to reach the required output? What mathematical operations are necessary? When are they performed and how often? What are the sizes and numbers involved? How accurate must output be? Will audit checks be necessary? What type of reference data is checked as part of the procedure (price lists, etc)? What comparisons are made in the procedure and what are the possible alternatives (actual versus budget, etc)? How many times do they occur?

From this study, certain data processing errors and duplications of effort will probably come to light. Now is the time to correct them, whether the company decides to computerize or not.

Feasibility Assessment. Now it is time to analyze the facts. At each point in the business system we need to ask the following questions:

. What is being done and why? Can it be eliminated?
. Could it be done elsewhere?
. Should it be done elsewhere?
. Should it be done at a particular time?
. Should it be done be a particular person?
. Should it be done in a certain way?

As we look at each application, keep in mind several alternative conclusions that could result:

1. A continuation of the present system with possibly some modification, or the addition of minor data processing equipment such as bookkeeping machines.

2. The computerization of the specific areas within the company, for instance payroll or accounts payable.

3. The total computerization of all applicable functions either through a centralized computer system or through one or more individual microcomputers.

As you consider the way data is collected and transferred from department to department, you will undoubtedly develop some possible improvements. Implement these improvements immediately.

As an example of the type data you will be collecting, two examples of a payroll file are exhibited below:

**EXAMPLE ONE**

**Employee File.** This file contains information about the employees and their rate and frequency of pay and is used to prepare paychecks. The table below shows some elements that might be contained in a file and the maximum number of characters that would be allowed for each of the records:
<table>
<thead>
<tr>
<th>Item</th>
<th>Maximum Record Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Employee name</td>
<td>25</td>
</tr>
<tr>
<td>2. Street Address</td>
<td>25</td>
</tr>
<tr>
<td>3. City</td>
<td>20</td>
</tr>
<tr>
<td>4. State</td>
<td>2</td>
</tr>
<tr>
<td>5. Zip Code</td>
<td>5</td>
</tr>
<tr>
<td>6. Social Security Number</td>
<td>9</td>
</tr>
<tr>
<td>7. Number of dependents</td>
<td>2</td>
</tr>
<tr>
<td>8. Rate of pay</td>
<td>6</td>
</tr>
<tr>
<td>9. Frequency of pay</td>
<td>2</td>
</tr>
<tr>
<td>10. Various codes for deductions (bonds, insurance)</td>
<td>20</td>
</tr>
<tr>
<td>11. Miscellaneous codes</td>
<td>20</td>
</tr>
<tr>
<td>12. Total</td>
<td>136 characters</td>
</tr>
</tbody>
</table>

**EXAMPLE TWO**

Check File. This file is essentially an image of the check and check stub that is produced for the employee:

<table>
<thead>
<tr>
<th>Item</th>
<th>Maximum Record Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name (payee)</td>
<td>25</td>
</tr>
<tr>
<td>2. Social Security Number</td>
<td>9</td>
</tr>
<tr>
<td>3. Check number</td>
<td>5</td>
</tr>
<tr>
<td>4. Date of check</td>
<td>6</td>
</tr>
<tr>
<td>5. Amount of check (net pay)</td>
<td>8</td>
</tr>
<tr>
<td>6. Gross pay</td>
<td>8</td>
</tr>
<tr>
<td>7. Federal income tax</td>
<td>8</td>
</tr>
<tr>
<td>8. State income tax</td>
<td>8</td>
</tr>
<tr>
<td>9. FICA</td>
<td>8</td>
</tr>
<tr>
<td>10. Period worked</td>
<td>6</td>
</tr>
<tr>
<td>11. Miscellaneous</td>
<td>20</td>
</tr>
<tr>
<td>12. Total</td>
<td>111 characters</td>
</tr>
</tbody>
</table>
Summary. Employee file (15 employees x 136 characters) = 2,040 characters.
Check file (52 weeks x 15 employees x 111 characters) = 86,580 characters.

Main memory is measured in terms of 1,000 characters (bytes) at a time. You need enough main memory for the operating system (the program which runs the computer itself), the applications program, and the largest file you will be using at one time.

The check file's size of 86,580 characters will be the absolute minimum required since employees may be replace or new employees hired, which will necessitate adding new information. The best rule is simply to double the count to 173,160 characters. If the owner of this business is looking at a floppy disk capable of storing 300 K characters, there would be plenty of room for an entire year's transactions.

Once the size of each file in your business is determined, the sum of all of those files determines how much mass (disk) storage you need. Small non-rigid mylar disks 3¼ to 8" in diameter (most often 5½") offer reasonable capacity (80,000 to 1,250,000 characters) and reasonable cost. If you store a sizable amount of data, you will need a "hard" disk. These disks are sealed, fast, and large. They range from 5,000,000 characters up.

The best way to buy a computer is to purchase the computer that is most cost effective for the software you selected. The primary questions concerning the machine itself involve whether or not you will have one or more simultaneous users, compatibility with the software you select, and size of the main memory (RAM).

A few example systems' prices for typical small business systems' setups are presented in Appendix 1. A similar example is presented in Appendix 2 for small multiuser systems (3 to 20 users).

In addition to software and hardware you will need general supplies (paper, printer ribbons, diskettes—about 40 to start) and any specialized supplies called for by the software you purchase.
Finally, let's review twelve basic steps for you to take in selecting a small computer.

1. Learn a little about small computers.
2. Learn about various applications like those discussed earlier.
3. Develop a "wish list" of applications that might help you better conduct business.
4. Document how information is collected, where it goes, and how it is reported in your business.
5. Determine the number of characters in each report, each document, and each file and the number of times each piece of information occurs.
6. Restate your "wish list" in terms which better match your idea of computer use after you see how much information is involved.
7. From vendors, get preliminary prices and a list of what functions are performed by each piece of hardware/software you are considering using.
8. Prioritize your "wish list" in terms of how each potential application is economically justified.
9. Explore the vendors in your area:
   . What are they proposing - how much does it cost?
   . What support do they offer?
   . What are the contract terms?
   . What is the vendor's expertise (particularly in your specialized business)?
   . What is the vendor's financial status, size, stability?
10. Produce a written requirements statement:
    . Programs of interest
    . Size of storage
    . Amount and quality of printing
    . Hardware support
    . Software support
    . Training
    . Installation
    . Any unusual supplies
APPENDIX I

TYPICAL SINGLE USER HARDWARE CONFIGURATIONS
TYPICAL SINGLE USER HARDWARE CONFIGURATIONS

System I
CPU: Apple II plus - professional pack $1,995
includes: the CPU, 128 K RAM, green CRT terminal, two diskette drives of 320 K each

Printer: Epson MX-100 F/T - 80 character per second $665
Dot matrix - 15-inch wide dot matrix printer

Hard Disk: Davong 5 million character $1,395

Comments: Separately housed CPU, monitor, disk drives. Simple keyboard.
System Hardware Total $4,055

System II
CPU: Tandy (TRS-2000) $4,250
includes: the CPU, 128 K RAM, color CRT terminal, one 320 K diskette drive and 10 million characters of hard disk storage.

Printer: Tandy DMP-2100 $1,995
160 character per second, heavy-duty dot matrix printer, 15-inches wide

Comments: Tandy corporation's newest entry into the small business market.
System Hardware Total $6,245

System III
CPU: Zenith Z-120 $5,599
includes: the CPU, 192 K RAM, green CRT terminal, one diskette drive of 320 K, 11 million characters of hard disk storage built in.

Printer: Diablo 630 - 40 characters per second, letter quality, $1,940
15-inch wide, heavy duty printer with tractor feed.

Comments: Three units - separately housed CPU, monitor, and printer. A solid, business oriented system with versatile keyboard including numeric keypad and function keys.
System Hardware Total $7,539
**System IV**

**CPU:** IBM/XT  
includes: the CPU, 128 K RAM, one diskette drive of 360 K, 10 million character built-in hard disk.  

$4,995

**Monitor:** IBM green CRT terminal with display adaptor  

$680

**Printer:** NEC 3550 - 33 character per second, letter quality, 15-inch wide heavy duty printer with tractor feed.  

$2,000

**Comments:** Typical three-unit configuration with CPU, monitor, and printer housed separately. A solid, business oriented system with mid-range keyboard.  

System Hardware Total: $7,675

**System V**

**CPU:** TI-Professional  
includes: the CPU, 128 K RAM, one diskette drive of 320 K, 5 million characters of built-in hard disk storage.  

$4,690

**Monitor:** 13-inch Amdek green CRT terminal  

$154

**Printer:** Data South - 180 characters per second, heavy-duty dot matrix, 15-inch wide printer with tractor feed.  

$1,995

**Comments:** Three-unit configuration with CPU, monitor, and printer housed separately.  

System Hardware Total: $6,839

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**NOTE:** To communicate via telephone with national/regional data bases and multilisting services any of the above systems will require a modem, cable, and communications package. Modems with cables are priced between $200 and $700 depending on features and speed.
APPENDIX II

TYPICAL SMALL MULTIUSER HARDWARE CONFIGURATIONS
## TYPICAL SMALL MULTIUSER HARDWARE CONFIGURATIONS

### System I

- **CPU:** Altos computer 5-50  
  - Maximum users: 8  
  - Maximum storage: 6 million characters  
  - Workstation: typical setup of 3 CRT's using televideo 910's at $699 each  
  - Printer: NEC 7730 - 55 characters per second, letter quality, 15-inch wide printer  

<table>
<thead>
<tr>
<th>System Hardware Cost</th>
<th>$11,172</th>
</tr>
</thead>
</table>

### System II

- **CPU:** Molecular computer 10-8  
  - Maximum users: 20  
  - Maximum storage: 15 million characters included. Expandable to 60 million characters  
  - Workstations: 3 CRT's using televideo 910's at $699 each  
  - Printer: Pagemark 2410, 350 characters per second, tractor feed, 15-inch wide industrial printer with correspondence mode.

<table>
<thead>
<tr>
<th>System Hardware Cost</th>
<th>$12,587</th>
</tr>
</thead>
</table>

### System III

- **CPU:** Northstar Horizon  
  - Maximum users: 16  
  - Maximum storage: 30 million characters  
  - Workstation: 3 QUME QBT 102's with interface cards. Additional workstations with cards at $1,297 each.  
  - Printer: QUME Sprint II, 40 characters per second, letter quality, 15-inch wide printer.  

<table>
<thead>
<tr>
<th>System Hardware Cost</th>
<th>$11,417</th>
</tr>
</thead>
</table>

### System IV

- **CPU:** Alpha Micro AM 1000 E  
  - Maximum users: 7  
  - Maximum storage: 30 million characters  
  - Workstation: 3-AM-60 Video Display Terminal  
  - List $1,000 each  
  - Printer: AM-302 with tractor, etc.  
  - List $2,750  

| System Hardware Cost | $15,050 |
APPENDIX III
REAL ESTATE SOFTWARE VENDORS
Real Realtor
Software Solutions, Inc.
P.O. Box 301
Muscatine, IA 52761

Sell-a-House
Software Solutions, Inc.
P.O. Box 301
Muscatine, IA 52761

Superval
Real Estate Applications Software
12 Manor Rd.
Smithtown, NY 11787

Real Estate Models for the '80s
Commercial Software Systems, Inc.
7689 W. Frost Dr.
Littleton, CO 80123

QuickCalc Real Estate Investor
Simple Soft, Inc.
480 Eagle Dr. #101
Elk Grove, IL 60007

DFP Real Estate Investment Analysis
Dominion Financial Projection
P.O. Box 846
Virginia Beach, VA 23451

Real Estate Analysis Package
Aeronca, Inc.
Execuware Division
7415 Pineville-Matthews Rd.
Charlotte, NC 28226

Real Estate Consultant
Consultant System Inc.
3704 State St. #311
Santa Barbara, CA 93105

Real Estate Office Accounting
MicroVenture
211 Business Center Dr. #220
Irvine, CA 92715

Investment Property Cash Flow Analysis
Distributed Computing Systems
P.O. Box 185
Lombard, IL 60148

Residential Financial Analysis
MicroVenture
2111 Business Center Dr. #220
Irvine, CA 92715

Real Estate Investment Comparisons
Software Models
P.O. Box 1029
Crestline, CA 92325

Real Estate Tools I
Ansonn Software Inc.
2801 N. Surrey Dr.
Carrollton, TX 75006

Real Estate Analysis
Sydney Development Corporation
600-1385 W. Eighth Ave.
Vancouver, B.C.
V6H 3V9 Canada

Real Estate Investor
Omni Software Systems, Inc.
146 N. Broad St.
Griffith, IN 46319
APPENDIX IV

ACCOUNTING SOFTWARE VENDORS
Maxi Accountant
Business Division
155 Sabal Palm Dr.
Longwood, FL 32750

Ledger 1
Soft Lab
P.O. Box 2186
Bremerton, WA 98310

Fund Accountant
Computer Center
366 U.S. Rt. 1
Falmouth, ME 04105

Peachtree Accounting Software
Peachtree Software
3445 Peachtree Rd. NE
Atlanta, GA 30326

PeachPak 4
Peachtree Software, Inc.
3445 Peachtree Rd. NE
Atlanta, GA 30326

Cal-Plus, Full System
Micro Instructional
3453 N.W. 55th St.
Fort Lauderdale, FL 33309

HAI*Line
Holland Automation
3400 W. MacArthur Blvd., Ste.D
Santa Ana, CA 92704

Versa Business Series
H & E Computronics, Inc.
50 N. Pascack Rd.
Spring Valley, NY 10977

Real World General Accounting
Real World
Dover Rd1, Willow Hill Bldg.
Chichester, NH 03263

Bonus Accounting
Programming Shop
1164 Umbarger Rd.
San Jose, CA 95121

CPAids Client Write-up
CPAids
1061 Fraternity Circle
Kent, OH 44240

TCS Total Accounting System
TCS Software, Inc.
3209 Fondren
Houston, TX 77063

Inventory Service, Inventory Stockroom
Fogle Computing Corporation
P.O. Box 5166
Spartanburg, SC 29304

Micro Ledger
Tiny Systems
660 N. Glenville Dr.
Richardson, TX 75081

Business Software Series
Spectrum Software
690 W. Fremont
Sunnyvale, CA 94087

Software Fitness Program
Open Systems
430 Oak Grove
Minneapolis, MN 55403

Powerful Business Software
Distributed Computing Systems
157 S. Martha St.
P.O. Box 185
Lombard, IL 60148

Big One, Little Ledger
Software Solutions
P.O. Box 301
Muscatine, IA 52761

MCIA Accounting Series
Micro Associates, Inc.
2300 Highway 365 #510
Nederland, TX 77627

Complete Business System
Omni Software Systems
146 N. Broad St.
Griffith, IN 46319
ACCOUNTING

AMI
Automation Management
5718 Westheimer #410
Houston, TX 77057

AMI Manufacturing Package
Automation Management
5718 Westheimer #410
Houston, TX 77057

Basic Accounting
Computer Systems Design, Inc.
P.O. Box 735
Yakima, WA 98907

PC Accounting Pack
Micro Business Applications
12281 Nicollier Ave. S
Burnsville, MN 55337

Eazyacct
Miracle Computing
313 Clayton Ct.
Lawrence, KS 65044

Solomon III
Computech
Main Line Industrial Pk.
Lee Blvd.
Frazer, PA 19355

Money Minder
Intelligent Software
4947 Mercury St.
San Diego, CA 92111

Point of Sales/Inventory Control
Intelligent Software Systems
P.O. Box 308
Montogomery, WV 25131

General Ledger
P.B.H.
P.O. Box 485
Morrison, CO 80465

Big Five Accounting System
Sunburst Software
2696 N. University Ave. #250
Provo, UT 84604

Star System 1 General Accounting
Star Software Systems
20600 Gramercy Pl. #103
Torrance, CA 90501

Easy Business Accounting Series
Information Unlimited Software
2401 Marinship Way
Sausalito, CA 94965

Hardisk Accounting Series
Great Plains Software
123 N. 15th St.
Fargo, ND 58102

Insoft Accountant
Insoft
P.O. Box 19208
Portland, OR 97219

Micro Biz
Compumax
P.O. Box 7239
Menlo Park, CA 94025

PC-Fund
Northwest Systems, Ltd.
P.O. Box 773028
Steamship Springs, CO 80477