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AICPA

CONSULTING SERVICES PRACTICE AID 92-5

Technical Consulting

Automating Small and Medium-Sized Businesses in Selected Industries

AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS

Management Consulting Services Division

MCS Technical Consulting Services Practice Aid 92-5

AICPA

NOTICE TO READERS

This practice aid will be integrated into a manual for consulting services issued by the AICPA Management Consulting Services Division and is numbered for that purpose. It is designed as educational and reference material for Institute members and others who provide *consulting services* as defined in the Statement on Standards for Consulting Services issued by the AICPA. It does not establish standards or preferred practices.

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CONSULTING SERVICES
PRACTICE AID 92-5

Technical Consulting

Automating Small and Medium-Sized Businesses in Selected Industries

AMERICAN

INSTITUTE OF

CERTIFIED

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ACCOUNTANTS

Management Consulting Services Division

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1 2 3 4 5 6 7 8 9 0 MCS 9 9 8 7 6 5 4 3 2

PREFACE

This practice aid is one in a series intended to assist practitioners in applying their knowledge of organizational functions and technical disciplines in the course of providing consulting services to clients in selected industries.

Although these practice aids often deal with aspects of consulting services knowledge in the context of a structured consulting engagement, they are also intended to be useful to practitioners who provide advice on the same subjects in the form of a consultation. Consulting services are defined in the Statement on Standards for Consulting Services (SSCS) issued by the AICPA's Management Consulting Services (MCS) Division. The SSCS appears in appendix 50/F of section two of this practice aid.

This practice aid should be particularly helpful to practitioners who use the technical expertise of others while remaining responsible for the work performed. For readers employed in the selected industries, this practice aid may be useful in providing advice to management.

This practice aid does not purport to include everything about an industry that a practitioner needs to know to become expert in providing consulting services. Current conditions in an industry may vary from those at the time the practice aid was developed.

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50/100 SCOPE OF THIS PRACTICE AID

.01 One of the most important—and sometimes difficult—questions facing management is whether to continue to use a manual approach, to automate a system, or to enhance the existing automated system. To help a client decide which approach is best, the practitioner needs to study the firm's capabilities and internal procedures. In addition, some generalizations about the advantages of computerization may be helpful in making the decision. These advantages include greater speed and accuracy and lower costs. An automated system also provides the capability of producing management reports that may be too cumbersome or costly to issue with a manual system. More importantly, computerization improves the control and accuracy of revenue and expense information, which, in turn, enhances the effectiveness and efficiency of the major accounting areas.

.02 This practice aid provides information that will help practitioners to assist in automating the systems of small and medium-sized companies in the following industries:

- Construction
- Law
- Medicine
- Restaurants
- Property management
- Retailing
- Distribution

.03 To conduct a successful engagement to automate a client's business operations, the practitioner needs an organized approach to systems planning and implementation. This practice aid provides the practitioner with industry-specific information, an engagement approach, and checklists to assist with projects. Information for further research on industry sources is provided in each section. However, engagement circumstances differ, and the practitioner's professional judgment may cause him or her to conclude that an approach described in this publication is inappropriate in particular situations.

.04 Practitioners who wish to have guidance in conducting automation engagements and basic knowledge of the selected industries will find this practice aid to be of special interest.

This publication does not purport to provide all the necessary background information for each industry covered. It consists of the following sections:

.05 *Section one—Automation of Specific Industries*. For the industries covered, section one describes the industry background, its automation needs, application areas, issues and concerns, and industry information sources; it also provides a glossary and bibliography. In addition, when appropriate, this section contains checklists that use the terminology and address the special automation needs of the individual industry.

.06 *Section two—The Engagement Process*. Section two outlines a general engagement process, which the practitioner can use in all of the selected industries. It includes guidance on two activities that will help the practitioner obtain an engagement: *(1)* researching the market and *(2)* identifying available software. Section two also includes advice on how to conduct the engagement and how to identify follow-on engagement opportunities.

.07 *Section three—Sample Engagement Letters, Forms, and Checklists*. Sample engagement letters, forms, checklists, and other exhibits constitute section three. The checklists are general so that the practitioner may use them for any of the industries covered. For particular engagements, the practitioner can also refer to the industry-specific checklists in section one.

.08 This practice aid addresses specific issues for each industry in the separate parts of section one. Mastery of many of the technical concepts may require independent study and research. Accordingly, this practice aid is not intended to provide all the materials necessary to ensure the successful implementation of complex or large systems that involve local area networks, multi-user operating systems, or mainframe applications. To address operational situations involving these elements, the practitioner may wish to consult other AICPA publications developed specifically for those environments.

SECTION ONE—AUTOMATION OF SPECIFIC INDUSTRIES

50/200 Part One—Automating A Construction Firm

50/300 Part Two—Automating a Law Practice

50/400 Part Three—Automating a Medical Practice

50/500 Part Four—Automating a Property Management Firm

50/600 Part Five—Automating a Restaurant

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50/800 Part Seven—Automating a Distributor

PART ONE—AUTOMATING A CONSTRUCTION FIRM

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50/200 AUTOMATING A CONSTRUCTION FIRM

50/205 INTRODUCTION

.01 Construction firms are under pressure to expand service levels, reduce costs, and meet scheduled dates. In today's competitive environment, a contractor's profitability, and even survival, depend on its ability to respond effectively to these pressures.

.02 Automated systems can help a construction firm respond to the pressures. However, automation has a significant impact on a firm's operations, clients, and suppliers. For example, automation introduces new procedures and methods to employees and affects inventory transactions with suppliers. In addition, the majority of the computer system requirements are defined by the contractor-client relationship. The issues associated with these consequences of automation are addressed in this part of section one.

.03 To respond to the pressures caused by rapid changes and competition in the construction industry, firms are seeking better ways to control costs and manage projects. Clearly, efficient project management and labor cost control give construction firms an advantage over their competitors. Consequently, contractors are constantly evaluating new equipment, materials, methods, structures, financing alternatives, and operating policies. Their objective is to develop a system that increases revenues and profits and improves cash flow.

.04 Associated with that objective are specific client needs and issues. This part of section one addresses these needs and issues, but it does not address issues concerning government contracts and related federal acquisition regulations. The glossary provides definitions of construction industry terminology.

50/210 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 The term *construction* refers to new work on, additions to, or alterations of buildings and other facilities. Most construction projects of any size involve a planning administration firm (the general contractor) along with several specialty firms (subcontractors) that provide specific skills. Very few construction firms have all the necessary skills to complete a large project. Consequently, the construction industry is characterized by temporary associations between firms that work together on a project-by-project basis.

.02 There are basically four types of contractors: general contractors, subcontractors, highway and heavy contractors, and home builders. Each has the following unique needs.

- *General contractors*—To bring together all the subcontractors necessary to complete a job, general contractors need strong control over subcontractors, materials flow to the job, draw requests, and scheduling. Sometimes general contractors also complete a specific portion of the construction that is their specialty. General contractors combine estimates from subcontractors with estimates of work they will do themselves and submit a bid or proposal for the total job.

- *Subcontractors*—Specializing in particular skills, such as those associated with electrical work and plumbing, subcontractors complete a specific part of the construction project. The specialty areas are broken down according to the material, equipment, and amount of labor required. These contractors review the blueprints or job specifications, calculate the materials and labor hours required, and submit an estimate to the general contractor. Typically, the general contractor and subcontractor formalize their relationship with a contract.

- *Highway and heavy contractors*—To build new roads, dams, bridges, and tunnels, highway and heavy contractors require large capitalization for the heavy equipment needed.

- *Home builders*—Typically, home builders build a certain number of homes each year. They have few employees and subcontract most of the work. Home builders organize their work by project and gain efficiency by having employees perform similar job tasks at several project sites.

Contractor Characteristics

.03 Although the construction industry is diverse, certain characteristics are common to all companies in the industry. The most common characteristic is that they perform work under contract with customers. A contractor, regardless of its construction activity or type, typically reaches an agreement with a customer to build or improve a property. The contract, which specifies the work to be performed and is the basis for determining the amount and terms of payment, usually requires completion of the job before the contractor's obligation is discharged. Unlike manufacturers, contractors usually work at job sites owned by customers rather than at a central place of business, and each project produces a unique property rather than identical products.

.04 To manage projects effectively, a contractor needs a system to track the significant terms of contracts. Commonly monitored contract items include price, costs (original, estimated, and actual), change orders, new contract price, estimated and actual profit, start and end dates, site, owner, billing method, retainage, and contract type.

.05 Other significant policies and practices common to contractors include the following:

- A contractor normally obtains work contracts by bidding or negotiating for specific projects.

- A contractor bids for or negotiates the initial contract price based on an estimate of the cost of completing the project together with the desired profit margin. The initial price may be changed or renegotiated.

- A contractor may be required to track separately the specification changes in the project, which are referred to as *change orders*.

- A contractor may be exposed to significant risks in the execution of a contract, particularly a fixed-price contract.

- Customers frequently require a contractor to post a performance bond or a payment bond as protection against failure to meet performance requirements.

- The costs and revenues of a contractor are typically accumulated and accounted for by contracts and commitments extending beyond one accounting period. Consequently, the associated management, accounting, revenue recognition, and financial reporting processes are usually complex.

Expansion of Industry Automation

.06 In the construction industry, information systems have become vital to the search for a competitive advantage. The use of computers will continue to expand as hardware and advanced software applications become more affordable and available. The increased cost effectiveness of hardware is most visible in microcomputer technology. In addition, during the last few years, software vendors have responded to increased industry demand by developing new packages and enhancing existing products.

.07 The use of computers has also increased because project owners and construction managers recognize that sound planning and control systems are critical to the success of a job. Many project owners expect bidders to demonstrate that their control systems and procedures are adequate even for fixed-price contracts. Industry managers know that information systems are becoming a marketing requirement as well as an internal management requirement. Bonding agents also demand that contractors have adequate accounting and control systems. In some cases, yearly audits are required, thereby making a sound system of internal controls and accounting controls necessary.

.08 Along with the increased use of information technology has come a greater need for security and job segregation. Construction company software provides a highly integrated system that allows the simultaneous posting of information to several journals and records. Hence, a single computer operator or bookkeeper can manage the information that, under a manual system, may have been assigned to more than one person. An integrated system helps to ensure accuracy and contain labor costs, but it also introduces the risk of gaps in internal control. To prevent serious gaps, the construction firm needs to establish proper accounting controls and segregation of duties. The practitioner may wish to list the examination of internal controls in a computer environment as a separate item in the engagement letter and bill accordingly.

50/215 ISSUES AND CONCERNS

.01 The construction industry's primary issues and concerns are related to complying efficiently with contractual and other reporting requirements and to controlling costs. The control of costs requires accurate and timely reporting from job sites and the physical security of job sites. An additional need is timely and reliable estimates of the costs of incomplete work.

.02 Automated systems can help clients to address these issues effectively and to enhance their own profitability. Applications in project management, specialized construction, and other areas can assist client management in staying competitive.

50/220 APPLICATIONS

.01 The nature of the construction industry requires that all costs incurred on each job be accumulated accurately. Because of its importance, the job cost system is one of the first applications that is automated for a construction firm. The flowchart (figure 50/200) shows how the job cost system is integrated with other accounting applications.

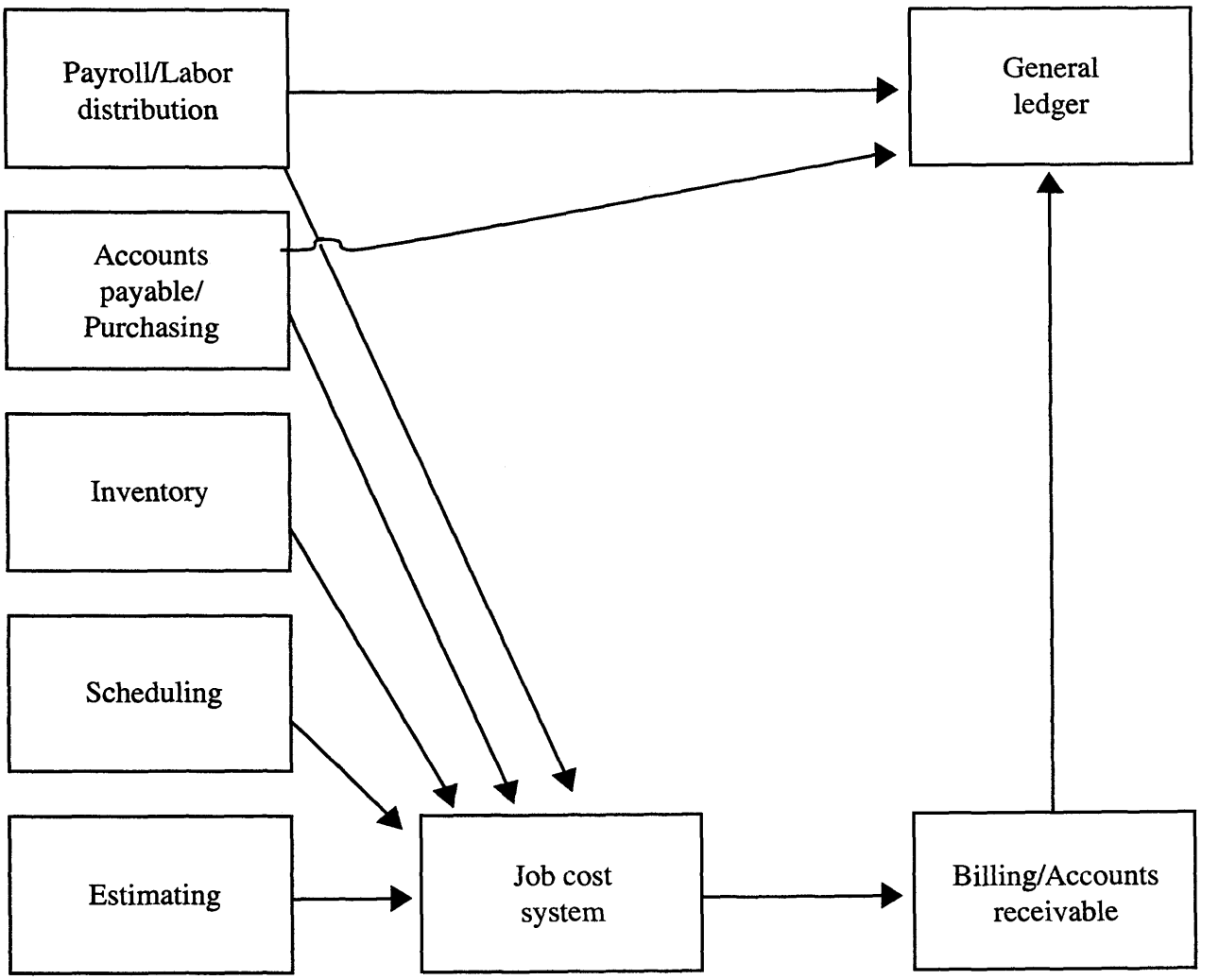
.02 Other major applications are associated with project development, management, and design.

Accounting

.03 **Payroll and Labor Distribution.** Construction employees usually record their time spent on a project on time cards or reports, which are approved by the project supervisor. The time data are used to calculate gross payroll, deductions, tax and withholding requirements, and net pay for employees. The information is entered once into a contractor's payroll and labor distribution system, which then provides reports that support current entries to the general ledger and job cost systems. The general ledger is usually posted at a summary level. The job cost system posts both dollars and hours at the same level of detail as the project budget.

.04 The construction industry has some unusual computational requirements that are not supported by many automated payroll systems designed for other industries. One such requirement is to compute withholding tax for an employee who works and lives in several tax jurisdictions during the same payroll period. Another is to compute payments to the same employee at different rates based on the type of work or skill level. Hazard pay differentials are an example of this requirement. Union reports, certified payrolls, per diem rates, indirect costs, and workers' compensation worksheets are also handled differently in the construction industry than in other industries.

Figure 50/200
Construction Application Areas



.05 **Accounts Payable and Purchasing/Committed Costs.** The purchasing and committed cost system tracks the costs of procuring materials and services. Most purchasing systems record a commitment when a purchase or subcontract is awarded and track and report variances between the originally committed and the actual quantities or prices. A major feature of purchasing systems used in the construction industry is the ability to track retainage balances (the amount of money held by the general contractor or owner to ensure completion of the job).

.06 The accounts payable system accumulates approved vouchers for purchased items and services, maintains the accounts payable subsidiary ledger, and produces checks. The major feature of the accounts payable system is its ability to interface with several other systems, such as the general ledger, purchasing, and job cost systems, using only one entry. The accounts payable system also needs to be able to process nonproject invoices and post them only to the general ledger.

.07 The accounts payable system must be capable of retaining a certain amount or percentage of the current payment if a general contractor is obliged to withhold monies from a subcontractor until completion of the job. The result is an outstanding payable to a subcontractor for the additional money due.

.08 **Billing and Accounts Receivable.** In general, the accounts receivable system for construction firms is similar to that in other industries. The billing function, however, is different. The need of a construction firm to automate its billing process depends on the complexity of its project contracts.

.09 The typical automated billing system takes information from the project cost status system and generates preliminary contract billings in a standard format, usually that of the American Institute of Architects (AIA). The system usually allows the preliminary billing to be corrected through manual adjustments. If a construction company uses a manual system to determine the income or accounts receivable billing each month, it usually relies on an engineer's estimate of the percentage of the project completed or the owner's seat-of-the-pants estimate. Software designed for construction companies, however, allows a more efficient method of determining income. The software computes a cost based on the percentage-of-completion method, which calculates costs incurred to date as a percentage of total expected costs. The differences between the amount billed and the amount computed as earned are accounted for as over- or under-billings on a job-by-job basis. This difference is also recorded on the balance sheet in total as a separate asset or liability. If the completed-contract method of income is used, the software tracks the income earned and expenses incurred for the contract but does not report on the profit and loss statement until the contract is completed. Whichever method is used to determine income, the software should be able to account for contract income and losses in accordance with generally accepted accounting principles (GAAP).

.10 The system prints the adjusted billings and posts the total amount to the accounts receivable system. Unique to a system designed for the construction industry is the ability

to bill on a phase-by-phase basis, track construction liens received, provide budget approval, and signal when gross billing exceeds the total contract amount.

.11 Most construction software packages allow for retainage on projects. This is money, usually a percentage of each bill or a percentage of the total billing, that is withheld from the general contractor until completion of the project. For billing and accounts receivable purposes, this retainage would represent an *additional receivable*. A general contractor may have retainage receivable as well as retainage payable to a subcontractor.

.12 **Job Cost.** The job cost module is where data about all estimated, committed, and actual units, hours, and dollars are stored, allowing for in-depth analysis of each construction project. The job cost system is updated without additional entries when information is processed through the accounts payable, payroll, subcontract control, accounts receivable, inventory, equipment costing, and estimating systems. The benefits to construction companies are job cost information that is timely and accurate and assures that all costs have been accounted for and reported.

.13 The job cost system may incorporate billing and collection analyses according to salesperson, job location, job phase, or some other category. A fully integrated job cost system can save time and reduce clerical errors. In such a system, all payroll information is entered and transferred to each job by cost type and phase. The system then issues reports that compare actual with estimated job costs for each cost type and phase and for the total project.

.14 A function unique to construction and long-term contract accounting is the allocation of direct overhead to construction jobs in progress. Including the overhead allocation allows for complete analysis of the contracts. Job cost accounting software will track these costs and allocate them to each job based on payroll dollars, payroll hours, or some other method that reasonably allocates the costs.

.15 Some of the management reports that can be generated by the job cost system include—

- Labor reports that compare estimated with actual hours, dollars, and units.
- Cost reports in a variety of summary or detailed formats, which allow management to focus on what makes the company profitable.
- Reports of pending and approved change orders.
- Job histories by job, project manager, customer, or class.

.16 The job cost system also provides accounting controls by reporting up-to-date job costs for project management even before an accounting period closes. It may also keep track of detailed costs, as well as summary information, thereby providing easy-to-follow auditing trails back to the source documents.

.17 **Inventory Management.** Although inventory may not be the largest single asset of a construction company, the ability to control it is critical to the tracking of job costs. Contractors that maintain warehouses or large on-site inventory of construction materials and supplies need an automated system to help them manage the inventory. With an inventory management system, contractors can get up-to-the-minute readings of what is on hand or on order, and the back order position for any inventory item. The most important benefit, however, is that it can assign a job number to all inventory items for cost purposes. An inventory management application can either stand alone or be fully integrated with the purchasing and committed cost system.

.18 **General Ledger.** The general ledger system receives data from the payroll and labor distribution system, the purchasing and committed cost system, the accounts payable system, and the billing and accounts receivable system. It also receives journal entries for adjustments and accruals. The general ledger requirements for the construction industry do not differ significantly from those of other industries. Differences exist, however, in the way the chart of accounts is defined and in the required accounts, such as overbillings and underbillings. Some construction companies also prefer to establish separate general ledger accounts for each project to facilitate reconciliation between the general ledger and the accumulated project costs that are maintained by another software program.

.19 **Construction Equipment Accounting Control.** Contractors with a large investment in construction equipment may benefit from an equipment accounting and control system. This system maintains equipment cost and location records and usage statistics for maintenance scheduling and project billing. It also supports repair or replacement decisions with reports of equipment maintenance history.

.20 An equipment costing system usually enables equipment costs to be charged to jobs easily through either the payroll, job cost, accounts payable, or inventory system. In addition, it may provide a means to track revenue earned and actual costs incurred against each piece of equipment.

.21 The benefits of this system are timely and accurate costing of equipment to jobs and reporting of the true costs and revenue generated by each piece of equipment.

.22 **Labor Productivity Control.** The labor productivity control system may be part of the job cost system or it may be separate. This system shows the same key facts as the job cost system but focuses on labor. It generally contains additional information, such as wage-rate variance analysis, crew productivity, skill-mix analysis, and trade performance. The system is of most benefit to construction firms with a significant direct labor force and to those with responsibility for monitoring the labor content and performance of projects under construction management contracts.

.23 **Overhead.** An overhead expense is a cost of doing business that is not chargeable to any identifiable piece of work. Examples of overhead expenses include office rent, utilities, insurance, and office salaries. They also usually include depreciation of office furniture and equipment, subscriptions, association dues, and rental of the storage yard.

.24 Overhead expenses should be listed in a permanent record and entries should be made as they occur on a daily, weekly, or monthly basis. In this way the contractor knows at any time what the overhead cost is and can use the record to estimate the future costs.

Project Development and Management

.25 **Scheduling.** Scheduling is one of the most critical aspects of a complex project. The scheduling module of a project management system may or may not be integrated with the job cost system. Most scheduling systems are based on critical path method (CPM) network techniques. These applications allow management to develop a detailed plan for completing a project and to measure actual progress against that plan. Most importantly, they allow project managers to evaluate how various work sequences or resource assumptions could affect the overall project schedule.

.26 The first step in developing a CPM network schedule is to list all activities that must take place to complete the project. An activity can be a construction assignment, the receipt of key materials or equipment, an inspection, or any other procedure that must be accomplished. The second step is to determine how many resources of each type (labor, construction equipment, bulk materials, and so forth) are required to complete each activity and how long each activity should take.

.27 The third step is to define the relationships between each activity. For example, activity one needs to be finished before activity two can start; activity three needs to be started before activity four is started; and activities four and five can be done simultaneously. Lead and lag times between activities are also established.

.28 As the project progresses, the project manager records the completed activities and enters the estimated time required to complete the remaining activities. Based on this information, the system recalculates the critical path and highlights any unused time. The system often reports schedule information in the form of graphs in addition to standard computer reports.

.29 **Estimating.** Estimating project costs to develop a bid can be tedious and time-consuming, but the ability to estimate these costs accurately is crucial to profitability. In addition, reliable estimates may mean the difference between winning or losing a potentially profitable project. Computerized estimating packages that match project components and their related costs are used increasingly in the industry.

.30 Some project cost status systems can be used to support cost estimation by entering the estimate into the system as a budgeted amount. Furthermore, some firms have found that simple microcomputer spreadsheets can provide valuable assistance in this area. A spreadsheet can be especially helpful on the bid day, when the final estimates from subcontractors and major suppliers are frequently received at the last minute. The final bids can be entered into the system, and revised estimates can be produced quickly.

Design

.31 **Computer-Aided Design and Drafting.** Computer-aided design and drafting (CADD) systems are common in large design and engineering firms. These systems can improve designers' and drafters' productivity and enhance the quality of the product. Full-function CADD systems may be too expensive for small firms. However, many small firms use less expensive microcomputer systems, which perform many of the basic CADD functions.

.32 **Engineering Design and Analysis.** Software is available for performing specialized engineering design calculations and analyses, such as stress analysis, cut-and-fill calculations, and electrical-circuit analysis. Several inexpensive packages are available in microcomputer versions.

Other Applications

.33 Computers can be used to help manage the day-to-day administrative activities of construction firms. Microcomputers can assist in improving efficiency and control in project management, financial management, and administration. The following microcomputer applications can help in the management of a construction firm.

- *Document processing.* Text processing software can reduce the time required to draft, revise, and file contracts, progress reports, and other documents.

- *Drawing and submittal control.* Systems can track drawing and submittal status and maintain distribution lists. Automating these tasks can help reduce delays and disputes related to missed deadlines and ensure that revisions are properly distributed and superseded drawings and documents are properly accounted for.

- *Subcontract record keeping.* Software for subcontract record keeping can be used with a microcomputer at the project site to maintain information on the current status of all subcontracted work.

- *Change control reporting.* Software is available to track and control pending and approved project changes.

- *Project performance data capture and communication.* Software can capture, validate, and process project performance data at the job site or communicate it to a central site for processing. Automation at the project site can reduce time delays and many of the clerical errors associated with paper-based progress reporting. Additionally, with remote-access software, supervisors at the job site can access data in the central computer.

50/225 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Codes

.01 The Standard Industrial Classification (SIC) codes maintained by the Department of Labor for general contractors for single-family houses and residential buildings are 1521 and 1522. The codes for contractors of industrial buildings, warehouses, and nonresidential buildings are 1541 and 1542. The SIC code is required on certain governmental filings and can be used to obtain demographic information regarding the construction industry from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations

.02 The following are sources of information about the construction industry. The practitioner may also find it useful to refer to trade associations or local chambers of commerce, and to the bibliography at the end of part 50/200 for additional guidance.

American Institute of Architects
1735 New York Ave., N.W.
Washington, DC 20006

American Institute of Constructors
20 South Front Street
Columbus, OH 43215

Construction Financial Management Association
40 Brunswick Avenue, Suite 202
Edison, NJ 08818

Construction Management Association of America
12355 Sunrise Valley Drive, Suite 640
Reston, VA 22091

Mechanical Contractors Association of America
1385 Pickard Drive
Rockville, MD 20832

National Association of Women in Construction
327 South Adams Street
Fort Worth, TX 76104

National Construction Software Association
104 Wilmot Road, Suite 201
Deerfield, IL 60015

National Institute of Building Sciences
1201 L. Street, N.W.
Washington, DC 20005

Professional Construction Estimators Association of America
P.O. Box 11626
Charlotte, NC 28220-1626

Professional Women in Construction
342 Madison Ave., Suite 453
New York, NY 10173

APPENDIX 50/A

CHECKLISTS FOR CONSTRUCTION FIRM AUTOMATION ENGAGEMENTS

Section Three—Illustrative Letters, Forms, and Checklists contains several checklists, which the practitioner will find helpful in conducting engagements to automate a client's systems. In addition to those generic checklists, the practitioner may find the following checklists useful in an engagement to automate a construction firm.

Exhibit 50A-1

Checklist of Accounts Receivable Features

Features	*Required*	*Desired*	*No Need*	*Notes*
Billing basis				
Percent complete	____	____	____	_____
Time and materials	____	____	____	_____
Draw requests	____	____	____	_____
Fixed bid	____	____	____	_____
Direct labor	____	____	____	_____
Recurring bills	____	____	____	_____
Change orders	____	____	____	_____
Retainage handling				
Separate retainage record	____	____	____	_____
Tracks by invoice	____	____	____	_____
Draw sheets	____	____	____	_____
Reports				
Billing history by job	____	____	____	_____
Trial balance by job	____	____	____	_____
Progress billings	____	____	____	_____

Exhibit 50A-2

Checklist of Job Cost Features

Features	*Required*	*Desired*	*No Need*	*Notes*
Job file information				
Status				
Category				
Retainage code				
Workers' Compensation				
Name				
Contract				
Estimator				
Project manager				
Foreman				
Start date				
Estimated completion date				
Actual completion date				
Phase				
Description				
Status				
Percent complete				
Unit of measure				
Start date				
Completion date				

Features	*Required*	*Desired*	*No Need*	*Notes*
Contract data				
Original amount				
Contract date				
Change orders amount				
Current billing				
Month-to-date billing				
Cumulative billing				
Job-numbering scheme				
Numeric only				
Alphanumeric				
Total job costs				
Estimated				
Actual				
Job costs types per phase				
Labor				
Material				
Equipment				
Subcontractor				
General				
Miscellaneous				
Percentage of completion calculation				
Job				
Job and phase				
Job, phase, and cost type				

Features	*Required*	*Desired*	*No Need*	*Notes*
Budget variance calculation	_____	_____	_____	_____
Job history by budget				
Job	_____	_____	_____	_____
Job class	_____	_____	_____	_____
Customer	_____	_____	_____	_____
Project manager	_____	_____	_____	_____
State taxing authority	_____	_____	_____	_____
Labor costs				
Unit estimates	_____	_____	_____	_____
Cost estimates	_____	_____	_____	_____
Unit actual	_____	_____	_____	_____
Cost actual	_____	_____	_____	_____
Variance	_____	_____	_____	_____
Job and phase	_____	_____	_____	_____
Markup percentage or amount	_____	_____	_____	_____
Material costs				
Cost estimates	_____	_____	_____	_____
Unit estimates	_____	_____	_____	_____
Actual costs	_____	_____	_____	_____
Actual units	_____	_____	_____	_____
Variance cost to date	_____	_____	_____	_____
Job and phase	_____	_____	_____	_____
Markup percentage or amount	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Subcontractor detail report				
Original cost	_____	_____	_____	_____
Current budget	_____	_____	_____	_____
Date	_____	_____	_____	_____
Units	_____	_____	_____	_____
Amount	_____	_____	_____	_____
Description	_____	_____	_____	_____
Retainage due	_____	_____	_____	_____

Exhibit 50A-3

Checklist of Accounts Payable Features

Features	*Required*	*Desired*	*No Need*	*Notes*
Subcontractor control				
Contract amount	_____	_____	_____	_____
Amount billed	_____	_____	_____	_____
Amount retained	_____	_____	_____	_____
Amount paid	_____	_____	_____	_____
Balance	_____	_____	_____	_____
Workers' Compensation certificate	_____	_____	_____	_____
Change orders	_____	_____	_____	_____
Retention				
Percent computation	_____	_____	_____	_____
Flat-amount computation	_____	_____	_____	_____
Draw requests	_____	_____	_____	_____
1099s	_____	_____	_____	_____

Exhibit 50A-4

Checklist of Payroll Features

Features	*Required*	*Desired*	*No Need*	*Notes*
Time-card input				
By job	____	____	____	_____
By type of skill	____	____	____	_____
By employee	____	____	____	_____
By employee and job	____	____	____	_____
By day	____	____	____	_____
Multicosts/billing rates per job	____	____	____	_____
Multibilling rates per employee	____	____	____	_____
Earnings distribution to—				
Unions	____	____	____	_____
Departments	____	____	____	_____
Rates	____	____	____	_____
Job and phases	____	____	____	_____
Day (certified)	____	____	____	_____

GLOSSARY

AIA formats The American Institute of Architects has several forms for construction work that are used by owners, general contractors, and banks. See also "Industry Information Sources."

activity A component task of a project representing a specific amount of work to be accomplished with definite start and completion points.

bid bond A form of bid security executed by the bidder as principal and by a surety. See also **surety bond.**

bonding company A firm or corporation executing a surety bond or bonds, payable to the owner, that secure the performance of a contract, either in whole or in part, or that secure payment for labor and materials.

certified payroll Projects done for federal, state, or local governments require regular reports certifying the following information for each employee who works on a project: skill levels worked with the number of regular, overtime, and premium time hours and pay rates, taxable deductions, and net pay.

change order A request made by the customer for a change in estimate or specification.

committed costs Costs that have been entered through purchase orders or some commitment accounting module and that represent goods and services ordered but not yet received and invoiced. These are important to some contractors for ensuring that they are not overbilled on a particular purchase order or for projecting total costs for a job.

cost estimate An estimate of the cost of completing a component of work based on a detailed analysis of the resources used and application of the unit cost values for each resource.

critical activity An activity on the critical path that has no float (slack) time.

critical path A path of activities from beginning to end of the project that has no total float. The total time required to traverse the critical path is the shortest time in which the project can be completed.

critical path method (CPM) An analytical and computational technique using a network plan to determine the sequence of and resources required for each task in a project.

direct cost The portion of total cost that takes into account only material and labor assignable to a project.

direct entry to job cost A procedure by which transactions are entered directly to the job cost system without first going through another module.

draw request A request usually made by a subcontractor for partial payment for work performed as part of a yet uncompleted project.

estimate A contractor's prediction of the cost to complete a given construction task. The total estimate for the job includes costs, direct costs, and profit margin.

indirect costs All costs of doing work not assignable to a particular project.

lien A charge against a project for satisfaction of unpaid debts on work performed or materials supplied.

lien release A document stating that materials and services furnished to a project have been paid for.

lien waiver An instrument by which a person or organization that has or may have a right of mechanic's or materials lien against the property, or against another property, relinquishes such right.

overrun The amount of cost over and above the original estimate.

percent complete Customer billing based on the portion of the job completed. The portion of job completed generally is determined by comparing project cost to date with the total project cost.

piece-rate payroll Payment of employees according to the number of units they produce.

phase Like costs grouped together, usually in order of physical construction. A phase can correspond to predefined completion points for progress billing. Examples are fees and permits, foundation laying, and concrete work.

program evaluation and review technique (PERT) A method of analyzing an event-oriented network plan. The variances of three project duration estimates provide a basis for computing the probability of reaching an event at a given time.

project The complete job to be accomplished as defined by clear points of start and completion, a description of work to be done, and a breakdown of the activities involved.

retainage The amount of money held back from the general contractor by the owner, or by the general contractor from the subcontractor, for work completed. The owner or contractor holds the money back to ensure that the entire project will be completed satisfactorily. Retainage is typically 10 percent of the total bill. A general contractor may have retainage receivable and retainage payable to a subcontractor.

surety bond Noninsurance transfer under which a person called a *surety* guarantees that another person, called a *principal*, will carry out some express obligation to some third person called an *obligee*.

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50/300 AUTOMATING A LAW PRACTICE

50/305 INTRODUCTION

.01 The practice of law is labor-intensive. Compensation of employees is a major item on a law firm's profit-and-loss statement. Consequently, systems that help lawyers and their support personnel become more productive are desirable and can be economical.

.02 Written documents are the only tangible product of most law firms. The systems and procedures of a law firm are designed to ensure that information is collected, stored, and communicated effectively and accurately. The critical components of a law firm information system therefore are data and word processing. Law firm data processing includes such typical accounting functions as general ledger, accounts payable, time accounting with related billing, as well as docket management and conflict-of-interest avoidance. The word processing component includes document production and retrieval.

50/310 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 Law firms vary in size and may limit their practice to a single specialty such as commercial law, corporate law, litigation, or personal injury. Within these firms, various departments may have different automation needs. However, the common threads among the various law firm specialties are word processing, date and docket control, and time monitoring.

.02 Computers have had a major impact on improving law office management and productivity. The earliest application of automation in law offices was word processing. This application effectively streamlined the repetitive task of drafting and redrafting documents. Technology also improved the accountability of professional time. The introduction of affordable microcomputers created an opportunity for law firms of every size to automate their practices in some way. Small law firms, in particular, reaped the benefits of microcomputers by using them for accounting, administrative, and support functions to accomplish tasks that had been done manually because larger systems were too expensive. The use of desktop computers by lawyers has also grown tremendously, reducing reliance on administrative support while speeding up the creation of documents.

.03 Despite these opportunities, many law practices in the United States are only partially automated. Consequently, the informed practitioner has many opportunities to assist law firms in selecting and implementing computer systems.

.04 More law firms could benefit from computer systems because they would facilitate their use of budgets to manage both the hours and the revenues of their professional staffs. In addition, computer systems can be used in analyzing accounts receivable turnover and related cash collections. Consequently, systems that produce management reports on accounts receivable aging and work in process, as well as on personnel productivity, can be effective business tools for the firm manager.

.05 General practice, commercial, corporate, and litigation firms generally bill on an hourly basis. Personal-injury firms, however, usually earn their fees on a contingency basis, as a percentage of the awards they collect on behalf of their clients. Some personal-injury practices need programs to monitor their cases and to centralize information about witnesses, pleadings, critical dates, and insurance adjustors. In addition, personal-injury lawyers keep time records for those cases taken on a contingency basis.

.06 The automation needs of law firms can change. Many firms need systems that integrate such applications as electronic filing, voice mail, on-line research, data base, off-line storage, and time and billing.

.07 As a result of these perceived needs, lawyers are spending large amounts of money on automation. Recent surveys reveal that, on a per-lawyer basis, expenditures on automation average twice the expenditures on a firm's library.

50/315 ISSUES AND CONCERNS

.01 Managing partners and administrators of law firms face many obstacles to maintaining profitable operations. Fees are limited by both public opinion and the need to compete with other firms or with in-house counsel. Personnel is typically the largest operating expense item of law firms. Consequently, law firm managers are concerned with installing systems that streamline operations, allow sharing of support staff, capture data on overhead costs, and bill clients quickly and efficiently.

50/320 APPLICATIONS

Word Processing and Document Management

.01 Automated word processing is a vital need of most law firms. The word processing system for law firms includes document management software to ensure the orderly retrieval of standard documents, as needed. An effective document management system allows a firm to produce frequently used documents, such as wills, interrogatories, jury instructions, and demand letters efficiently and with high quality. Keystroked once, the documents can be used and revised as often as necessary. For example, an attorney can draft a standard will, leaving blanks for variables such as clients' and beneficiaries' names. Standard paragraphs and phrases (boilerplate) can be incorporated in the text at the push

of a button. Using a form with lines numbered and titled in the sequence of the blank spaces, the attorney or a paralegal can quickly list the variables to be inserted on the form and submit it to the word processing operator, who then produces a unique document.

.02 Today, many word processing packages are available. Most allow users to edit, store, and print documents. More sophisticated packages allow users to insert graphics and transmit documents to others over standard telephone lines. Some software packages contain legal dictionaries that check spelling, evaluate grammar, and check the accuracy of legal citations.

.03 Many law firms have purchased optical scanners and optical character recognition (OCR) software to input documents to their word processing systems without keystroking. Scanners are used for text retrieval systems especially in litigation support environments.

.04 As noted earlier, word processing was one of the earliest applications of computer technology in law firms. Consequently, many law firms have older computer systems dedicated to word processing. These systems are usually incapable of, or inappropriate for, any other processing function, such as the time-and-billing function. Additionally, older systems are often more expensive to maintain and less efficient than current technology and require technical knowledge not readily available in the workplace.

.05 Document management software supplements word processing software. In addition to the document summary feature included in many word processing programs, document management software allows the user to create a profile for each document. The user can search these profiles by using key words to identify documents concerning similar subjects. Some programs allow searching of the full text of documents. Many document management programs have version control and document check-in/check-out features. If the document management software is integrated with a time-and-billing system, the documents can be cross-referenced to client-matter numbers.

Time and Billing and General Accounting

.06 The major data processing functions required by law firms include accounting for the time spent and costs advanced on behalf of a client, analyzing productivity and realization, and reporting operating results to general management.

.07 **Billing and Accounts Receivable.** An important application of automation in a law firm is billing. The time-and-billing function automates the essential business operations of law firms. The typical program tracks the hours spent performing certain tasks for a particular matter, assists in preparing billings, and accounts for the firm's receivables. The time and costs accumulated, though not billed to clients, are considered work in process (WIP). An effective time-and-billing program also provides productivity reporting by individual and type of work function.

.08 Many firms' billing rates vary according to attorney, client, and the type of work performed. In addition, some states charge sales tax on professional fees and on certain

costs advanced (for example, telephone, copying, and messengers). Some other costs, however, may not be taxable. Therefore, the billing system must be flexible enough to allow the firm to include these variables automatically in calculations.

.09 A fully integrated time-and-billing system is capable of generating an aged receivables trial balance for both billed and unbilled time, indicating the client, the attorney assigned, the amount due, and its status. This capability facilitates timely billing and effective cash flow management.

.10 Trust accounting, sales taxes, finance charges, and coordination with accounts payable programs also affect the decision about what time-and-billing program to purchase. A firm can greatly enhance its profitability by capturing and billing for internal costs, such as copying, telephone, postage, and computer charges. Devices can be attached to office machines to assist in capturing these charges. With some software packages, the devices can be used to automatically enter the information into the time-and-billing system.

.11 Because of its importance and use by all firm members, the time-and-billing function is usually one of the first data processing systems the law firm automates. The flowchart (figure 50/300) shows the process flow of the time-and-billing function.

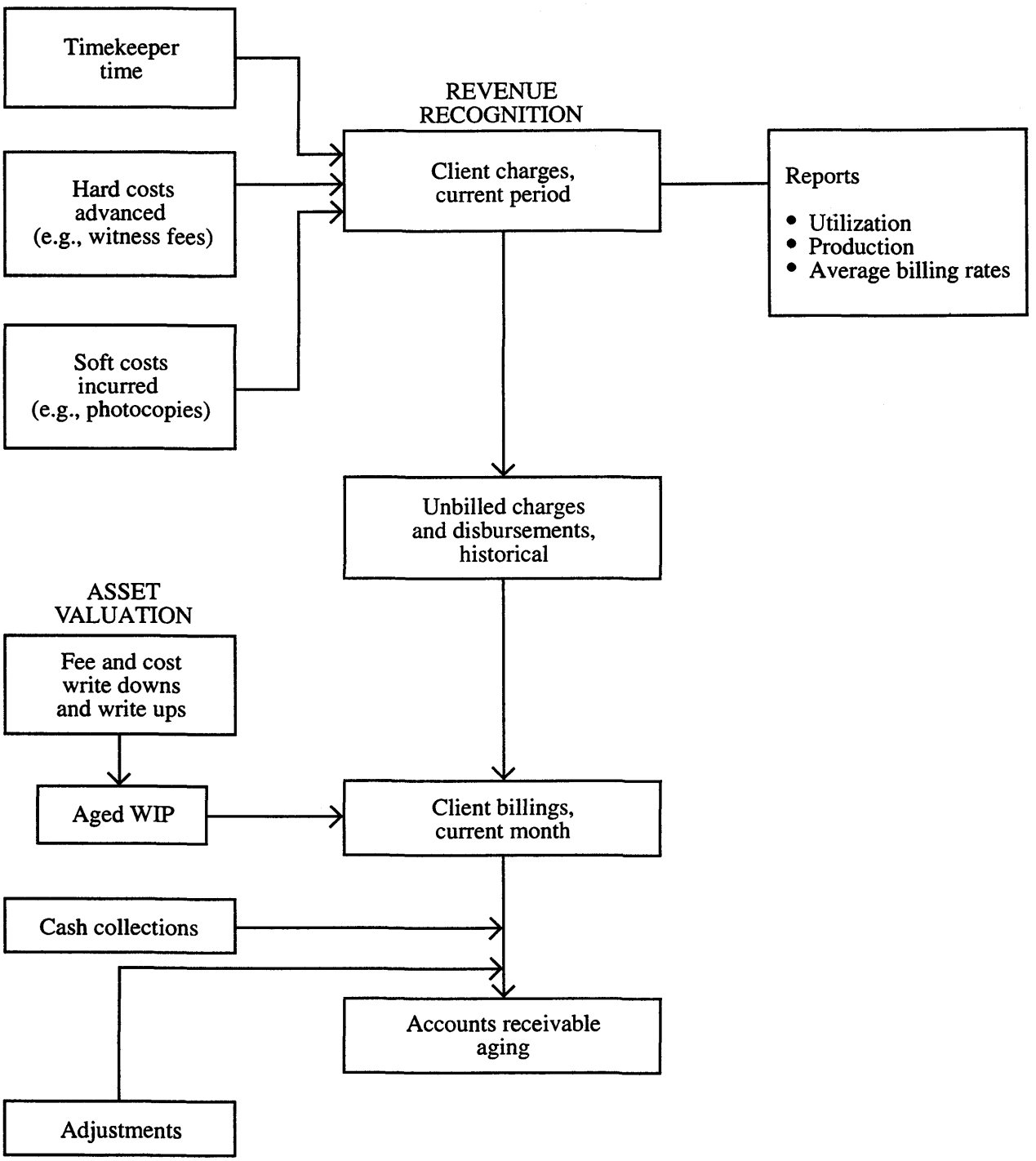
.12 The practitioner needs to review with the client the billing formats used and the features desired to ensure that the appropriate time-and-billing system is selected.

.13 **General Ledger, Accounts Payable, and Payroll.** In fully integrated installations, the data processing function includes applications for general ledger, payroll, and accounts payable. Ideally, the accounts payable application will allow direct posting to the time-and-billing module for client-related costs advanced and internal allocated costs. For example, if the firm were to incur an expense on a client's behalf, such as a witness fee, a fully integrated system would post the accounts payable system and the client's work in process ledger simultaneously. This type of processing ensures that client costs are captured properly. Computer-generated payroll checks and related billing and accounting can be easily and inexpensively implemented.

.14 **Trust Accounting.** Many firms have at least one trust account in addition to their general operating account. The trust account holds advances made by clients for anticipated costs the firm may incur and for settlements from client adversaries. In addition, clients may advance funds to show an adverse party that the money is on deposit until the controversy is resolved.

.15 Accounting for client monies in trust accounts is extremely important. At all times, a firm needs to be capable of preparing a reconciled accounting of its trust funds. Failure to maintain accurate trust records can result in severe disciplinary action, including disbarment. Consequently, the ability to provide detailed audit trails is an essential consideration in automating the trust accounting function.

Figure 50/300
Time-and-Billing Process Flow



Data Base and Text Retrieval

.16 **Conflict of Interest Management.** A law firm can be embarrassed if it inadvertently represents competing interests in a legal controversy. Such conflicts of interest arise for many reasons, including common management or ownership of entities and relationships between firm and client personnel. Usually, a law firm tries to avoid conflicts of interest by manually routing new-client information sheets and asking lawyers to indicate a possible conflict. Unfortunately, lawyers may be too busy, and their firms too large, to ensure a thorough review of the requests.

.17 A data base program may help a firm detect client conflicts. For example, the firm can maintain a data base of clients, defendants, and related organizations. As lawyers amend new-client forms, a clerk can check for conflicts of interest. The firm can develop this data base using a commercial package that is easy to manage and update.

.18 **Legal Research.** Legal research is time-consuming for lawyers. However, they can save much time and professional effort by using one of the sophisticated subscription legal data bases, such as Lexis or Westlaw.

.19 Additionally, optical disks with large capacity are rapidly becoming available at reasonable cost. This technology will allow publishers to provide the entire statutes of particular states and other large legal compendiums on a single disk. A researcher using a microcomputer can locate items in these large electronic publications in seconds.

.20 **Litigation Support and Case Management.** Computers can provide case management and document management support to law firms with active litigation departments. Case management involves gathering information about witnesses, exhibits, pleadings, and docketing. The computer can track the chronology of events, maintain records of phone conversations, written communications, and case notes, and store witness testimony. For example, a law firm that represents the defendant in a large antitrust case involving several expert witnesses and pleadings can implement a program to track all witnesses, create a schedule of when depositions were taken and who deposed them, and review various comments about the witnesses.

.21 Text retrieval systems provide the capability to access and review a deposition, search all depositions in a case for a particular word or phrase, or search the data base for document types, dates, and authors. Many court reporters issue transcripts in both printed and electronic forms. The law firm can import the transcripts into a data base in minutes and retrieve the information in seconds using sophisticated search techniques.

Other Applications

.22 **Analytical Tools.** Spreadsheets and data bases allow lawyers to organize critical information logically and evaluate it. What-if models can assist them in analyzing damages,

contract claims, and damage awards. For example, a spreadsheet may be useful in a contractor's claim against a project owner. If the contractor asserted that the project owner was responsible for the out-of-pocket costs because delays beyond the contractor's control caused the construction project to run two months over schedule, the contractor's attorney could use a spreadsheet to list the fixed costs on a day-by-day basis. If, after discussions with defense counsel, the attorney and client agreed to exclude some costs from the damage claim and to accept only one month in the settlement, plaintiff's counsel could use the spreadsheet to easily recalculate the claim based on these parameters.

.23 Expert systems (another analytical tool) help to solve problems according to rules and inferences developed by "knowledge experts." The rules of logic and reasoning are programmed in much the same way that attorneys approach a specific matter in a case. As various situations are encountered, precedents are created and later referred to in subsequent case situations.

.24 **Communication.** A significant activity in law firms is communication, both internal and external. The practitioner therefore needs to evaluate a firm's requirements for electronic communication. Law firms electronically communicate with clients on a daily basis through facsimile machines and modems. These point-to-point transmissions allow firms and their clients to cooperate in ways that provide more comprehensive assistance at substantial cost savings.

.25 With the advent of microcomputer networks in offices, many firms have installed electronic mail systems. Electronic mail allows users to communicate with each other, routing memos to various readers and saving them for future use.

.26 Another promising application for communication is the voice-activated computer, which allows the user to speak to the computer and receive an answer. This capability may become particularly useful in case management and trial presentation. Much effort has been put into creating effective voice-activated systems.

.27 **Docket Control.** An attorney's calendar is filled with critical dates, such as court appearance dates and due dates for pleadings and depositions. Failure to comply with due dates is not only professionally embarrassing but, more importantly, may also expose an attorney to a charge of malpractice.

.28 In some firms, attorneys' secretaries are responsible for their calendars. In many firms, however, tracking due dates is the responsibility of the firm's docket clerk. These firms have a central docket system that records all critical due dates for each case. For example, when a lawsuit is filed, the defendant must respond within a certain period. A good docket system will track that due date and alert the responsible attorney and firm management, thereby preventing failure to meet the deadline.

50/325 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Code

.01 The Standard Industrial Classification (SIC) code maintained by the Department of Labor for legal services is 8111. This code is required on certain governmental filings and can be used to obtain demographic information regarding the legal services industry from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations and Publications

.02 The Legal Technology Advisory Council (LTAC) of the American Bar Association helps lawyers use new technology to computerize their practices by testing software suitable for law offices and publishing the results. After extensive review and evaluation of the technology by lawyers and manufacturers, the LTAC develops guidelines and sets minimum performance standards. LTAC approval signifies that these standards have been met. The LTAC is at 750 N. Lake Shore Drive, Chicago, Illinois 60611.

.03 The following organizations may also be able to provide information useful to a CPA practitioner involved in automating a law practice.

Association of Legal Administrators (ALA)
175 E. Hawthorn Parkway, Suite 325
Vernon Hills, IL 60061-1428
(708) 816-1212

.04 The ALA has a Systems and Technology section which publishes a quarterly newsletter. Local area chapters are typically well represented by individuals involved in law firm administration with active involvement in many areas of systems management.

American Arbitration Association (AAA)
140 W. 51st Street
New York, NY 10020
(212) 484-4000

American Corporate Counsel Association (ACCA)
1225 Connecticut Avenue N.W., Suite 302
Washington, DC 20036
(202) 296-4522

.05 This publication does not purport to include all the background information on law firms, and the practitioner should refer to other trade associations for additional guidance.

Industry newsletters and publications on law firm technology and automation are also available. The following is a list of periodicals; some other specific publications are listed in the Bibliography following this part of section one.

ALA News. A bimonthly newsletter published by the American Association of Legal Administrators, 175 E. Hawthorn Parkway, Suite 325, Vernon Hill, IL 60061-1428.

The American Lawyer. A monthly journal published by American Lawyer Media, 600 Third Avenue, New York, NY 10016.

Law Office Economics & Management. A quarterly journal published by Callaghan & Company, 155 Pfingsten Road, Deerfield, IL 60015.

Law Office Management and Administration Report. A monthly newsletter published by the Institute for Office Management and Administration, Inc., 5 West 36th Street, New York, NY 10018.

Law Practice Management. A journal published eight times a year by the Economics of Law Practice section of the ABA, 750 N. Lake Shore Drive, Chicago, IL 60611.

Legal Management: The Journal of the Association of Legal Administrators. A bimonthly journal published by the Association of Legal Administrators, 175 E. Hawthorn Parkway, Suite 325, Vernon Hills, IL 60061-1428.

Legal Tech. A monthly newsletter published by Leader Publications-New York Law Publishing Company, 111 Eighth Avenue, New York, NY 10011.

Marketing for Lawyers. A monthly newsletter published by Leader Publications-New York Law Publishing Company, 111 Eighth Avenue, New York, NY 10011.

National Law Journal. A weekly trade newspaper published by Leader Publications-New York Law Publishing Company, 111 Eighth Avenue, New York, NY 10011.

APPENDIX 50/B

CHECKLISTS FOR LAW FIRM AUTOMATION ENGAGEMENTS

The checklists in section three of this publication outline most of the information necessary for conducting a law firm automation engagement. However, several additional items that may require the practitioner's attention are covered in the industry-specific checklists contained in this appendix.

The practitioner can use exhibit 50B-2, the "Law Practice Needs Assessment Survey," to interview the firm's various decision makers to determine its systems requirements. The assessment should be completed by all client personnel involved in the selection of the software.

In addition, the practitioner can modify the "Software Vendor Questionnaire" (exhibit 50-5 in section three) to determine whether an LTAC review has been performed on the software. Also, when using the checklist to evaluate an accounts payable module, the practitioner should consider whether the module can interface with the time-and-billing program for the purposes of client disbursements.

Exhibit 50B-1

Checklist for Selecting a Time and Billing System

Data	*Currently*	*Five Years*
Number of timekeepers (lawyers, paralegals, etc.)	_____	_____
Average number of time slips per day per timekeeper	_____	_____
Average number of months of unbilled time entries	_____	_____
Average number of characters of narrative text per time entry	_____	_____
Average number of client disbursements per month (all billable client expenses)	_____	_____
Average number of months of unbilled disbursements	_____	_____
Average number of characters of text per disbursements entry	_____	_____
Number of clients	_____	_____
Number of matters	_____	_____
Average age of accounts receivable (in days)	_____	_____
Average balance of accounts receivable	_____	_____
Number of bills issued per month	_____	_____
Average number of matters per bill	_____	_____
Average number of attorneys per matter billed	_____	_____
Number of years of history to be retained	_____	_____

Present Billing Preparation Procedures

_____

_____

_____

_____

_____

_____

_____

_____

Sales Tax Information

States: _____

_____

_____

Rates: _____

_____

_____

Are costs advanced taxable? _____

Finance Charge Information

Do clients pay a finance charge on unpaid balances? _____

Does the firm charge different rates to different clients? _____

Does it impose finance charges beginning with different time periods? _____

Statements

Cycles _____

Balance-forward method _____

Open-item method _____

Finance charges _____

Current Credit Procedures

_____

_____

_____

_____

_____

_____

_____

Aging Analysis

By responsible partner _____

By billing attorney _____

By attorney _____

Exhibit 50B-2

Law Practice
Needs Assessment Survey

Client Name _____

Features	*Required*	*Desired*	*No Need*	*Notes*
General (features dictated by the particular nature of the practice)				
Multiple matters per client	_____	_____	_____	_____
Extensive description to identify a client matter	_____	_____	_____	_____
Expenses and cost advances distinguished	_____	_____	_____	_____
Trusts and retainers distinguished	_____	_____	_____	_____
Reporting, responsible, and originating attorneys differentiated	_____	_____	_____	_____
Timekeeping (features associated with the timekeeping process)				
Ability to code system to retrieve standard descriptions of services performed	_____	_____	_____	_____
Unlimited narrative per time entry	_____	_____	_____	_____
Multiple billing rates per timekeeper	_____	_____	_____	_____
Ability to track nonbillable time	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Billing (the billing process, including reviews and adjustments to billings)				
Availability of a prebill worksheet for billing decisions	____	____	____	_____
Multiple billing statement formats	____	____	____	_____
Ability to adjust fees for billing by hours, value, and rate for individual timekeeper or total fees billed	____	____	____	_____
Ability to defer billings	____	____	____	_____
Open-item or balance-forward system	____	____	____	_____
Ability to provide multiple billing cycles (monthly, quarterly, etc.)	____	____	____	_____
Ability to apply trust/retainer monies	____	____	____	_____
Ability to produce interim billing statements	____	____	____	_____
Ability to generate work in process aging report for the firm, either by billing attorney or alphabetically	____	____	____	_____
Ability to charge sales tax on billings	____	____	____	_____
Ability to differentiate between sales taxes on costs advanced and fees	____	____	____	_____
Ability to determine which costs advanced are taxable on an item-by-item basis	____	____	____	_____
Ability to bill fees only	____	____	____	_____
Ability to bill costs only	____	____	____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Collection (the entire collection process)				
Ability to automatically generate past-due notices for selected delinquent accounts with the option of applying finance charges to selected clients	____	____	____	_____
Production of an accounts receivable aging report, by billing attorney or alphabetically for the firm	____	____	____	_____
Ability to charge different finance charges to various clients	____	____	____	_____
Ability to allocate cash receipts to timekeepers on a pro rata or fixed-percentage basis	____	____	____	_____
Management Reports (a range of system reports to provide the firm with data relating to productivity and profitability)				
Billing registers reflecting bills per cycle and creating an audit trail of hours and dollars billed by timekeeper and billed by client/matter	____	____	____	_____
Productivity reports monitoring time worked and reported by timekeepers, including billable versus nonbillable time and hours and dollars by type of law case	____	____	____	_____
Billing analysis reports reflecting, by timekeeper, the hours, dollars, and adjustments, plus month-to-date and year-to-date billing information	____	____	____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Billing analysis reports reflecting, by responsible/originating attorneys and law type, the hours, dollars, and adjustments, plus month-to-date and year-to-date billing information	_____	_____	_____	_____
Cash receipts analysis reports reflecting, by timekeeper, responsible/originating attorney and law type, fees billed, fees received, and fee writeoffs, plus month-to-date and year-to-date receipt information	_____	_____	_____	_____
Ability to provide an alphabetical client listing by month or client	_____	_____	_____	_____
Ability to generate a numerical client listing by month or client	_____	_____	_____	_____

Operational (features pertaining to routine, overall operation of the software in the firm)

System defaults to previously entered information, such as attorney codes and dates, during time entry, unless overriding data is entered (this speeds input and increases accuracy)	_____	_____	_____	_____
Ability to transfer time/ disbursement information from one matter to another	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Other Applications				
Docket control/calendar	_____	_____	_____	_____
Rolodex/client mailing labels	_____	_____	_____	_____
Conflict of interest checking	_____	_____	_____	_____
Document indexing	_____	_____	_____	_____
File management	_____	_____	_____	_____
Referral/Marketing/Tracking	_____	_____	_____	_____
Continuing legal education monitoring	_____	_____	_____	_____

GLOSSARY

conflict of interest A questionable relationship between the private interests and the official responsibilities of a person in a position of trust.

deposition The testimony of a witness taken upon interrogatories, not in open court. It is reduced to writing, duly authenticated, and is intended to be used upon trial of a civil or criminal case.

document indexing A process by which documents, such as pleadings or depositions, are electronically encoded in a data base and made available for electronic manipulation and review.

docket A list or calendar of cases set to be tried and motion hearings set for a specified time.

exhibit A paper or document offered for inspection to a trier of fact during a trial, arbitration, or hearing as a voucher or in proof of facts.

hard costs Costs directly associated with a client on whom funds are actually expended.

interrogatories A set or series of written questions drawn up to obtain information of interest in the case from a party, witness, or other person.

Legal Technology Advisory Counsel (LTAC). A division of the American Bar Association that reviews technology affecting lawyers. See ¶ 50/325.02.

optical character recognition (OCR) Software that translates graphic scanned images into numbers and letters that can be manipulated by word processors and other software.

optical scanner A device that reads written text and images and inputs them to computer readable files.

pleadings The formal allegations by the parties of their claims and defenses.

simple will A basic document that usually deals with a small estate and disposes of it by bequest.

soft costs Internally generated client costs, such as copy charges and computer charges.

statute A body of legislative acts declaring, commanding, or prohibiting something.

transcript An official copy of the record of proceedings in a trial or hearing.

trust account A separately maintained account for client monies.

work in process (WIP) Unbilled time and expenses charged to a client matter.

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50/400 AUTOMATING A MEDICAL PRACTICE

50/405 INTRODUCTION

.01 Small and medium-sized medical practices are finding that automation is necessary to improve efficiency and decision making. Consequently, many physicians are entering this arena. Accordingly, this part of section one provides an overview of the industry and the operational information and issues that the CPA practitioner needs to consider in automating a medical practice. The practitioner may need to seek guidance from additional sources, such as those listed in "Industry Information Sources" (¶ 50/425) for more detailed information about specific needs and problems. The glossary defines terms associated with medical practice operations.

50/410 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 Medical care is a major industry in the United States. In recent years, several forces have compelled physicians to concentrate more on the management of their practices. These forces include expanding patient volume, pressures to contain fees, additional documentation requirements, increased competition, and strict utilization review criteria of third-party payers. An effective computer system is necessary to respond to these pressures.

.02 Computers and appropriate software can increase a medical practice's productivity, resulting in enhanced rapport between physicians, staff, and patients. Automated medical practice systems also substantially improve the billing and collections functions, which, in turn, improves the cash flow. The practitioner needs to remember that each practice has unique requirements depending on its size and specialty. A medical practice may consist of one physician or several physicians. A practice with several physicians may combine many specialties or be limited to one specialty (for example, obstetrics and gynecology) with support staff who are also highly specialized.

.03 As a result of these differences, medical practices also differ in the following areas, and this will affect their information systems requirements:

- *Patient volume*. General practitioners may have a higher patient volume than do specialists such as cardiologists. Some medical practices have such a small patient volume that it may not be useful to automate procedures that can be handled adequately with a manual system.

- *Patient information.* Different types of practices require different patient information. For example, an orthopedic practice may have contact with a patient for only a few months. A family practice, on the other hand, may care for family members over the course of several years.

- *Codes.* The Current Procedure Terminology (CPT) code designates medical, surgical, and diagnostic services that physicians provide. A specialist may use very few of these codes, but a family practitioner probably will use many of them.

- *Charges.* Physicians charge for services on different bases. Obstetricians may contract for a specified payment plan over a period of nine months. General practitioners may charge as the service is rendered. Commercial health insurance companies, Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs), and Medicare may not pay the same rate to all physicians. Therefore, physicians' charges for the same service may vary depending on the third-party payer. Charges for a procedure will be reimbursed at different rates by different third-party payers.

- *Services.* Services vary according to the type of practice. For example, in some offices, laboratory expenses are significant; in others, they are minimal.

50/415 ISSUES AND CONCERNS

.01 Each medical practice is unique in its management style and business philosophy. The practitioner needs to determine what these are through discussions with the client and key practice personnel.

.02 Of particular concern in an engagement to automate a medical practice are the growth plans of the practice, particularly the size of the practice's staff and the patient volume of each provider. This information will help the practitioner to determine which functions should be automated and whether the client requires several workstations or a stand-alone system.

.03 Besides the usual security concerns associated with automation, the practitioner needs to consider the unique confidentiality and legal requirements of a medical practice. Unauthorized access to patient records could lead to serious problems for the physician. Therefore, extensive security procedures are needed. Additional security measures are required for a system that allows access via modem. The practitioner may also be required to sign a confidentiality document before beginning the engagement.

.04 The process of scheduling patients is a major consideration in automating a medical practice's systems. Proper patient scheduling is required to ensure smooth patient flow, improve patient satisfaction, and maximize each physician's efficiency. The final issue is the use of the general accounting applications in a medical practice. This may vary extensively from one practice to another. The practitioner needs to determine the extent to which the physicians wish to be responsible for their own general accounting.

50/420 APPLICATIONS

.01 The flowchart (figure 50/400) shows a typical integrated computer application for a medical practice. The size or specific nature of the medical practice may dictate other specialized applications.

Patient Information

.02 Patient information constitutes what some call the central or main file in a medical system. This file contains all the basic information about a patient: name, address and telephone number, parents' names, guarantor's or responsible billing person's name, referring physician, employment data, primary and secondary insurance coverage, medical history, medical alerts, allergies, recall information, clinical history, and hospital information. The patient information system should be integrated with the other major system applications of the medical office, such as the billing and insurance systems.

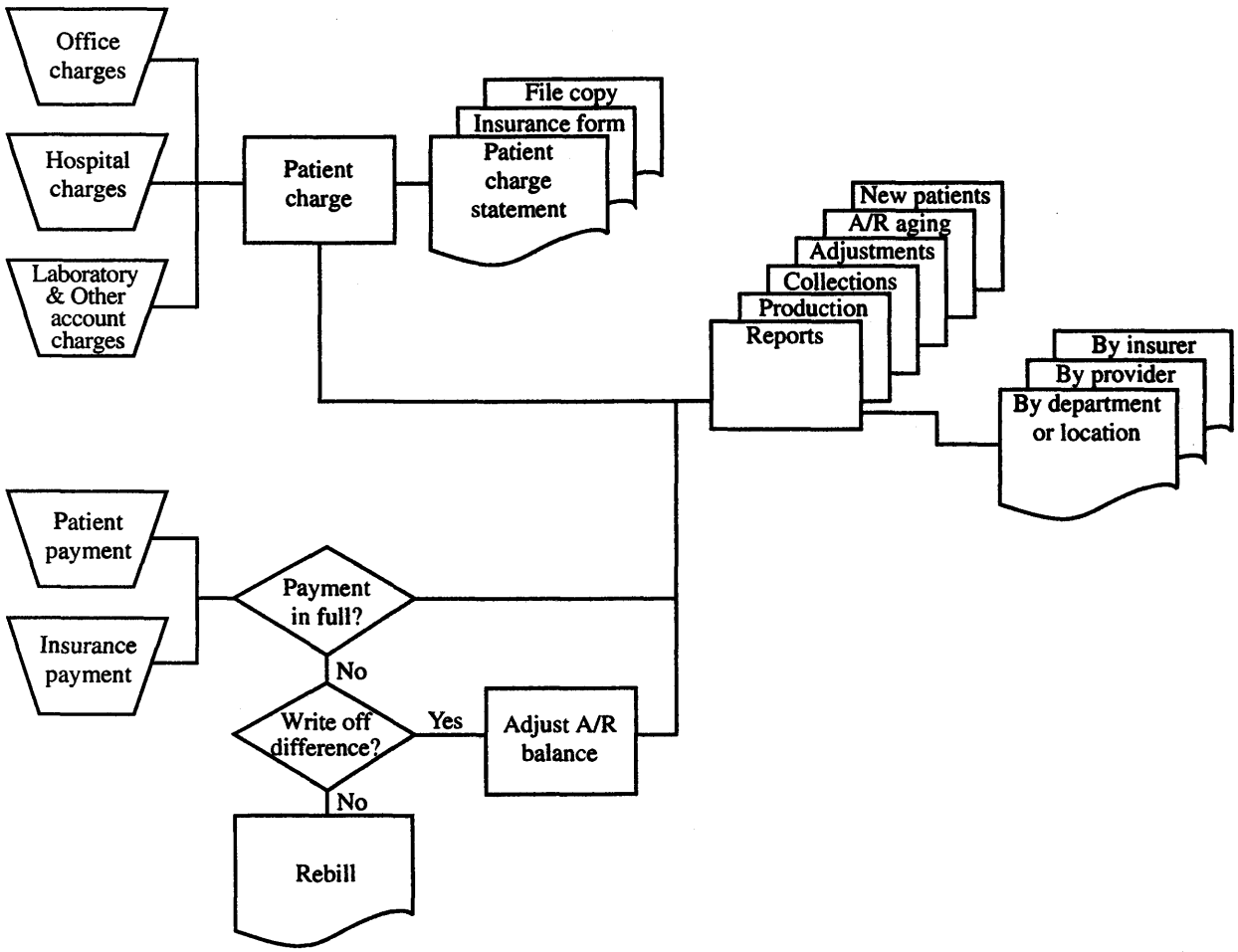
Billing, Insurance Claims, and Accounts Receivable

.03 The focal point in the process of automating a medical practice is the control of insurance claim procedures and the collection of charges and receivables. Therefore, these functions need to be automated first. Automating these procedures eases the processing of claims and allows them to be tracked.

.04 **Billing.** The billing function is also an important aspect of the medical practice. The complexity of patient billing varies with the type of practice and the office policies on collections, service charges, and the use of collection agencies. When considering how to automate the billing system, the practitioner needs to know whether the practice expects the patient to pay cash, accepts credit cards, or sends a bill. The practitioner also needs to answer the following questions:

- Does the practice participate in a health maintenance organization (HMO) or a preferred provider organization (PPO)?
- Does it accept payment from private insurers, Medicare, Medicaid, or Workers' Compensation? If so, who gets billed?
- Is the patient billed only if the insurance company does not pay?
- How are charges handled when insurance carriers refuse to reimburse certain items?
- How does the practice handle charges that exceed the amount reimbursed by insurance carriers?
- Does the provider bill the insurance company directly, or does the patient submit a claim?

Figure 50/400
Medical Practice Billing and Collection Process Flow



- When are secondary insurance companies billed?
- Is a bill prepared for immediate payment of services rendered, or is the patient billed later in the month?
- How are special charges, such as broken appointment fees, handled?
- How are outside work and charges (e.g., laboratory fees) handled?
- What happens with overdue accounts?
- Are credit cards accepted?

.05 In general, patients are either billed directly or a third-party payer is billed. If the practice bills insurers or third-party payers, it uses one of these means: (*a*) a computer-generated invoice that is mailed, (*b*) an invoice that is prepared manually on specified forms (for example, the superbill), or (*c*) a computer-generated invoice sent electronically through a modem.

.06 Most medical practices have a schedule of fees for the services they render. Fees are generally correlated with Current Procedural Terminology (CPT) codes. The computer system needs to allow for a range of fees for each service. This range would include different fees for welfare patients, staff, and other professionals, rebill charges for lab work, capitation billing, and hospital charges. Many PPOs, for example, limit the amount the patient pays per visit or procedure. To compensate for this limitation, the PPO pays a fixed amount per patient each month regardless of whether visits are made. This is known as a *capitated fee*. Additionally, the physicians may be limited on the amount they can bill to the PPO for each procedure.

.07 Automation of billing procedures may also require changes in office layout, paper flow, and patient flow. Proper flow of patients as they check in and check out will facilitate the automated billing procedures. Before implementing the systems, the practitioner needs to determine how often patient information will be updated and by whom, what forms will be used to generate patient information, and what approvals are needed to make changes in patient information. An established system will prevent a slowdown in printing out patient information as the patient completes a visit.

.08 **Insurance Claims.** Along with billing, the processing of insurance claims is a primary function to be automated in a medical practice. Automation eases not only the processing but also the tracking of claims. Tracking is a critical task that is very difficult with a manual system.

.09 Many third-party payers highly recommend that insurance claims be processed electronically. Usually the third-party payers specify the hardware and software as well as the format to be used for electronic transmission. Electronic claims processing usually improves the medical practice's cash flow.

.10 **Accounts Receivable.** As in other businesses, the aging of accounts receivables is important in managing a medical practice. The handling of problem accounts also requires special attention. When automating the system, practitioners need to determine whether the practice sends statements monthly or in other regular cycles, or if it sends them only after they have aged for a certain period. The system can be designed to generate different messages for each type of account. For instance, separate messages could be generated for patients with thirty-day, sixty-day, or ninety-day balances, for capitation patients, for full-pay indemnity patients, and for Medicare accept-assignment patients.

Scheduling

.11 A properly designed computerized scheduling system will substantially enhance the process, thereby providing patients with efficient service and physicians with productive calendars. Some physicians can only schedule a limited number of hours in the office. The scheduling system must be accurate and flexible enough to allow them to meet appointments promptly and use their time effectively.

.12 To establish an effective scheduling system, the practitioner needs to determine the average length of patient encounters, the schedule of office hours and break and lunch periods, and the suitable times for multi-physician and ancillary procedures. Other desirable features of a scheduling application include the capability to search for the next available appointment, to allocate time for various procedures, and to set aside time for emergencies and certain medical procedures. In a multi-specialty practice, the system may need to coordinate appointments with several different providers on the same day. The application system also needs to be able to print out the day's schedule for each doctor and examining room. Some practices may want the system to check patients' account histories when they schedule appointments.

Word Processing

.13 The large amount of paperwork and correspondence of a medical practice requires a word processing application. Desirable word processing features include the ability to prepare form letters and standard instructions for certain diagnoses, to transcribe medical records, and to maintain referral and mailing lists for marketing. Some medical practice software packages are compatible with the more popular word processing packages or incorporate a word processing package that can be selected from the same menu as the other applications. Many of these packages provide standard letters, such as referral acknowledgements, recall reminders, and thank-you letters.

Electronic Communications

.14 In addition to determining if a medical practice would benefit from transmitting insurance claims electronically to third-party payers, the practitioner should consider whether other communications applications would enhance operations. Other applications include—

- Communication among offices at different locations, allowing daily transactions at each location to be transmitted to the central computer.
- Access to on-line data bases, such as MEDLARS (a data base of the National Library of Medicine).
- Transmittal of information and lab results to physicians and other parties directly from hospitals.
- Access to patient records by physicians when they are on call at home.
- Capability to monitor hospital patients from physician offices.

Practice Management

.15 The practitioner needs to determine what reports physicians require to develop and manage their practices effectively. Extensive reports regarding production and management are generally available in medical practice software packages as a by-product of the various types of information that are processed. In general, a computerized system can generate these reports more readily than a manual system. Useful reports include those that show productivity data by office, physician, and type of service; income analysis; and practice statistics, such as number of encounters, number of new patients, number of patients by referring doctor, and average charge per encounter. Some systems can even provide analyses of the patient base by age and sex. All of this information can help physicians to manage their practices more effectively.

Medical Data and Reports

.16 A computerized system will provide the physician with the capability of rapidly searching patient data files to generate reports on medical alerts, analyses of medical history, and other related information. This capability is not feasible without a computer except in the smallest of practices.

General Ledger

.17 Should the physician desire to automate the practice's accounting books and records, the practitioner needs to select general ledger and financial reporting software. The system application needs to be able to provide basic financial reports, journals, and ledgers, as well as custom financial statements at any time. The system should also allow the client to have several periods open at the same time in order to make the transition efficiently from month-to-month and year-to-year.

.18 For income tax purposes, most medical practices report on the cash basis of accounting. Because of this, the practitioner needs to determine whether the client wishes the general ledger to be a stand-alone package, not integrated with the accounts receivable software.

Accounts Payable

.19 The accounts payable software manages the money the medical practice owes and prepares checks to be sent to vendors and suppliers. The system may also provide cash forecasts to help the medical office manage cash flow efficiently.

Payroll

.20 The payroll software calculates and prepares employee payroll checks and maintains earnings records for tax and other purposes. Payroll accounting in a medical practice normally has few, if any, unique requirements.

50/425 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Code

.01 The Standard Industrial Classification (SIC) code maintained by the Department of Labor for offices and clinics of medical doctors is 9217. This code is required on certain governmental filings and can be used to obtain demographic information regarding medical practices from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations

.02 The following list provides sources of information about automating medical practices. The practitioner may wish to refer to other professional and trade associations or to local chambers of commerce for additional guidance.

American Academy of Family Physicians
8880 Ward Parkway
Kansas City, MO 64114

American Association for Medical Systems and Informatics
1101 Connecticut Avenue, N.W., Suite 700
Washington, DC 20036

American Association of Health Data Systems
3550 Woodland Road
Ann Arbor, MI 48104

American Association of Physicists in Medicine
335 E. 45th Street
New York, NY 10017

American Board of Medical Specialties
One American Plaza, No. 805
Evanston, IL 60201

American College of Cardiology
9110 Old Georgetown Road
Bethesda, MD 20814

American College of Physicians
4200 Pine Street
Philadelphia, PA 19104

American College of Preventive Medicine
1015 15th Street, N.W.
Washington, DC 20005

American College of Radiology
20 N. Wacker Drive
Chicago, IL 60606

American College of Surgeons
55 E. Erie Street
Chicago, IL 60611

American Group Practice Association
1422 Duke Street
Alexandria, VA 22314

American Medical Association Department of Practice Management
535 N. Dearborn Street
Chicago, IL 60601

American Physicians' Association of Computer Medicine
10 N. Main Street
Pittsford, NY 14534

American Society of Computers in Medicine and Dentistry
P.O. Box 21483
Upper Arlington, OH 43221

American Society of Internal Medicine
1101 Vermont Street, N.W., Suite 500
Washington, DC 20005

College of American Pathologists
7400 N. Skokie Boulevard
Skokie, IL 60077

Federation of Computer Users in Medicine
Pacific Technology Center
Box 15579
San Francisco, CA 94115

Health Systems Vendors Association
45 Rose Street
San Francisco, CA 94102

Medical Group Management Association
104 Inverness Terrace East
Englewood, CO 80112-5306

Medical Library Association
919 N. Michigan Avenue, Suite 320B
Chicago, IL 60611

Symposium of Computer Applications in Medical Care
George Washington University Medical Center
2300 K Street, N.W.
Washington, DC 20037

APPENDIX 50/C

CHECKLISTS FOR MEDICAL PRACTICE AUTOMATION ENGAGEMENTS

Section three of this volume contains checklists that will assist the practitioner in conducting a medical practice automation engagement. The checklists in this appendix include several additional items that may help practitioners during the engagement. It should be noted that many medical practices separate medical records from financial records. The financial records for a practice may be maintained manually even when the billing, insurance, and patient information have been computerized.

Exhibit 50C-1

Checklist for a Patient Information System

Features	*Required*	*Desired*	*No Need*	*Notes*
Patient Data				
Registration	_____	_____	_____	_____
Name/Address/SSN/Phone	_____	_____	_____	_____
Financial classification	_____	_____	_____	_____
Account type	_____	_____	_____	_____
Age/Sex/Race	_____	_____	_____	_____
Family Data				
Parent name/Address/ Phone	_____	_____	_____	_____
Guarantor name/Address/ Phone	_____	_____	_____	_____
Employer name/Address/ Phone	_____	_____	_____	_____
Financial classification	_____	_____	_____	_____
Account type	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Insurance Data				
Insurance plan number	_____	_____	_____	_____
Insured party name	_____	_____	_____	_____
Insurance company contact	_____	_____	_____	_____
Effective and expiration dates	_____	_____	_____	_____
Multiple insurance companies	_____	_____	_____	_____
Medicare reimbursement	_____	_____	_____	_____
Deductible balances	_____	_____	_____	_____
Other (specify)_____				
_____	_____	_____	_____	_____
Medical Information				
Medical records	_____	_____	_____	_____
Clinical notes	_____	_____	_____	_____
Diagnostic notes	_____	_____	_____	_____
Treatment notes	_____	_____	_____	_____
Allergies/sensitivities	_____	_____	_____	_____
Prescription history	_____	_____	_____	_____
Family physician	_____	_____	_____	_____
Referring physician	_____	_____	_____	_____
Other (specify)_____				
_____	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Inquiry				
Account balance				
Date of last payment				
Patient number				
Services performed				
Insurance policy number				
Date insurance billed				
Account notes				
Reports				
Alpha listing				
Purged accounts				
Inactive account listing				
Referring physician report				
Other				
Production reports				
Credit balance				
Delinquent account				
Insurance aging				
Payment per CPT				

Features	*Required*	*Desired*	*No Need*	*Notes*
Production by Month				
By doctor	_____	_____	_____	_____
By facility	_____	_____	_____	_____
By financial classification	_____	_____	_____	_____

Exhibit 50C-2

Checklist for a Billing and Accounts Receivable System

Features	*Required*	*Desired*	*No Need*	*Notes*
Fee Structure				
Standard fees—office	_____	_____	_____	_____
Standard fees—hospital	_____	_____	_____	_____
Welfare fees	_____	_____	_____	_____
Reduced fees	_____	_____	_____	_____
Capitation fees	_____	_____	_____	_____
Fee override	_____	_____	_____	_____
Contract fees	_____	_____	_____	_____
Lab fees	_____	_____	_____	_____
Hospital visits	_____	_____	_____	_____
Physical therapy	_____	_____	_____	_____
Shared fees	_____	_____	_____	_____
Rebills	_____	_____	_____	_____
Credit check	_____	_____	_____	_____
Other (specify)_____				
_____	_____	_____	_____	_____
Access to Patient Information/Accounts				
By patient	_____	_____	_____	_____
By family	_____	_____	_____	_____
By treatment type or code	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Current Balance				
By patient	_____	_____	_____	_____
By family	_____	_____	_____	_____
Other (specify)_____				
_____	_____	_____	_____	_____
Assignment				
Multiple carriers (nos. required)	_____	_____	_____	_____
Multiple guarantors	_____	_____	_____	_____
Split charges	_____	_____	_____	_____
Split payments	_____	_____	_____	_____
Other (specify)_____				
_____	_____	_____	_____	_____
Demand Billing				
Exception billing	_____	_____	_____	_____
Budget billing	_____	_____	_____	_____
Individual billing	_____	_____	_____	_____
Family billing	_____	_____	_____	_____
Walk-out billing	_____	_____	_____	_____
Cycle statement billing	_____	_____	_____	_____
Balance forward or open item billing	_____	_____	_____	_____
Statements on demand	_____	_____	_____	_____
Finance charge	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Insurance Processing				
Superbill	____	____	____	_____
Universal Health Insurance (AMA) Claim	____	____	____	_____
Standard insurance forms	____	____	____	_____
UB-82 insurance form	____	____	____	_____
Government forms	____	____	____	_____
Capitation forms	____	____	____	_____
Electronic claims capability	____	____	____	_____
Signature on file	____	____	____	_____
Other (specify)_____				
_____	____	____	____	_____
Current Procedural Terminology (CPT) Codes				
Standard codes (e.g., DRG, ICD-9)	____	____	____	_____
Diagnostic codes	____	____	____	_____
Multiple codes capability	____	____	____	_____
Type of procedures	____	____	____	_____
Other (specify)_____				
_____	____	____	____	_____

Exhibit 50C-3

Checklist for a Practice Management Information System

Features	*Required*	*Desired*	*No Need*	*Notes*
Reports				
Day sheets	_____	_____	_____	_____
By practice	_____	_____	_____	_____
By doctor	_____	_____	_____	_____
By location	_____	_____	_____	_____
By payor	_____	_____	_____	_____
Other (specify)_____				
_____	_____	_____	_____	_____
Schedules Provided				
By doctor	_____	_____	_____	_____
By procedure	_____	_____	_____	_____
By department	_____	_____	_____	_____
By exam	_____	_____	_____	_____
By room	_____	_____	_____	_____
Front desk	_____	_____	_____	_____
Multiple bookings	_____	_____	_____	_____
Chart pull list	_____	_____	_____	_____
Encounter forms	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Appointments				
Find opening quickly	_____	_____	_____	_____
Find appointments quickly	_____	_____	_____	_____
Sooner list	_____	_____	_____	_____
Times for certain procedures	_____	_____	_____	_____
Emergency set-aside	_____	_____	_____	_____
Next-day verify	_____	_____	_____	_____
Hospital schedule	_____	_____	_____	_____
Other location schedule	_____	_____	_____	_____
Recalls	_____	_____	_____	_____
Follow-up appointments	_____	_____	_____	_____
Next-day patient list	_____	_____	_____	_____
Chart pull list	_____	_____	_____	_____
Week/Month at a glance	_____	_____	_____	_____
Hospital records	_____	_____	_____	_____

Exhibit 50C-4

Checklist for a Word Processing System

Features	*Required*	*Desired*	*No Need*	*Notes*
Greetings	_____	_____	_____	_____
Mailing list	_____	_____	_____	_____
Newsletter (desktop) publishing	_____	_____	_____	_____
Letters	_____	_____	_____	_____
Clinical reports	_____	_____	_____	_____
Patient notes	_____	_____	_____	_____
Medical records	_____	_____	_____	_____
Articles	_____	_____	_____	_____
Spelling checker	_____	_____	_____	_____
Integrated to patient file	_____	_____	_____	_____
Forms preparation	_____	_____	_____	_____
Automatic thank you to referrals	_____	_____	_____	_____
Data extraction from patient files	_____	_____	_____	_____

GLOSSARY

annual statements Statements normally requested by patients annually for tax purposes.

budget billing An arrangement for installment payments of a patient's bill over a short term.

capitation A uniform per capita payment or fee. Members of HMOs, PPOs, unions, and other organizations may pay a flat fee for providers' services. These organizations negotiate the fees with medical practices, physicians, and other providers.

cascade of coverage Condition occurring when insurance coverage overlaps and several companies are responsible for the same patient's bill.

contract billing Bills sent out for a set amount per month rather than for services as they are rendered as agreed to under a contract.

Current Procedural Terminology (CPT) A code that designates medical, surgical, and diagnostic services. The AMA administers it, updating it quarterly. Many states use their own version of CPT, for example, the Florida RVS (relative-value studies). However, these codes may not be updated with standard CPT updates.

cycle billing A system for scheduling the mailing of statements for specific parts of the accounts at specific times. For example, statements for patients whose names begin with *a* to *l* would be mailed on the fifteenth of the month; those for patients whose names begin with *m* to *z* would be mailed on the thirtieth.

day sheet A report of the practice's activities for the day.

demand billing Billing of a patient on the spot or as needed.

digitizer A device used to convert analog computer files to digital computer files. It may be used, for example, to enter X-ray plates into a digital computer.

dun To send collection letters.

episodic A practice with a highly irregular pattern of visits. An emergency service, for example, would display an episodic pattern.

exception billing The practice of sending bills only to patients whose accounts have not been paid by a certain date. Bills not sent are called *suppressed bills*.

family billing A system of sending a single bill to a family, showing the status of each patient, rather than billing individual patients separately.

guarantor The person responsible for paying a bill.

health maintenance organization (HMO) A prepaid group health insurance plan that entitles members to the services of participating physicians, hospitals, clinics, and other providers. The emphasis is on preventive medicine. Members pay a flat periodic fee for services but may be required to make a co-payment for some services.

hold back A portion of a payment that is retained as a performance bond.

ICD-9 The International Classification of Diseases, Clinical Modification, is a coded system for diagnoses, symptoms, complaints, and reasons for seeking medical attention. It is published by the Commission on Professional Hospital Activities.

individual billing The practice of billing each patient regardless of his or her relationship to other patients.

insurance bill charges Fees charged by a medical practice for preparing insurance forms.

longitudinal information Information about the medical condition of a person recorded at different points over a long period.

mandated fees Fee schedules established by government agencies or powerful insurance carriers.

MEDLARS The Medical Literature Analyses and Retrieval System, a data base of the National Library of Medicine.

MEDLINE The telecommunications network for accessing the MEDLARS data base.

MIC number Medicare number used in some states.

monthly statements The practice of sending bills to all patients whether they owe a balance or not.

MOS Medical office system.

multiprovider A medical practice with more than one professional staff member.

MUMPS A programming language used for large-scale medical records files.

out-service fees Charges for services provided at home or at facilities outside the office, such as hospitals and nursing homes.

preauthorization A determination of the portion of a bill that the insurance company will pay, which the patient obtains before receiving treatment.

preferred provider organization (PPO) A hospital, physician, or other health care provider that an insurance company recommends to insureds. The insurance company negotiates with these providers to accept lower prices for their services.

provider Health care professionals and facilities that can bill for services.

rebill A third-party payor rebilled for disallowed services such as laboratory expenses.

rebill charges Fees for preparing lab or consultant bills.

reduced fees Charges used for patients in special circumstances, such as welfare patients.

responsible party An individual, usually a parent, who is responsible for the health and welfare of a patient but not necessarily for the payments.

relative-value studies (RVS) Codes that some states use when several Blue Cross/Blue Shield plans are available within the state. In these cases, RVS and CPT codes may be variously acceptable.

sooner A patient with an appointment who would prefer to come in earlier if another patient cancels.

special billing Billing for other than medical services, such as for broken appointments.

split billing The practice of sending different parts of a bill to different parties. For example, one part of the bill may be sent to one parent at one address and the balance to another at a second address.

split or shared fees Fees payable to more than one provider.

standard fees Fees normally charged for services rendered.

statement Notification of the status of an account.

superbill A printed statement that serves both as the walk-out bill for the patient and as an insurance claim.

third-party billing Bills sent to insurers or other guarantors.

walk-out billing A bill prepared for patients upon completion of the visit. Normally, payment is expected immediately.

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PART FOUR—AUTOMATING A PROPERTY MANAGEMENT FIRM

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50/500 AUTOMATING A PROPERTY MANAGEMENT FIRM

50/505 INTRODUCTION

.01 A property management firm manages rental properties, which it may partially or fully own, or which others may own. The firm's responsibilities can include leasing and managing properties, collecting rents, budgeting and disbursing monies, and producing financial statements.

.02 Property management has evolved into a complex business during recent years. To remain competitive, property management firms have had to track more detailed information, use complicated marketing strategies to attract tenants, and accommodate growth in business volume. These businesses will continue to change as the real estate industry is reshaped in the next decade.

.03 Growing competition in the residential and commercial management industry has caused property management firms to seek better ways to administer their properties and control associated costs. As a result, property managers need to constantly analyze collections, costs, occupancy rates, and facilities data. Automating these tasks can have a significant impact on the firm, on owners, and on tenants.

50/510 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 Over the past ten years, property management methods have become more sophisticated. Automation is relatively new to the industry, but it is necessary. Most property management firms now use computers, and the remainder probably will convert to automated systems in the near future. An effective computer system is required to meet the primary objectives of property managers: to increase revenues and profits, improve cash flow, and maintain detailed data about tenants and properties.

.02 Property management lends itself well to automation because it is a data-intensive industry. Property managers must track information about owners, location, unit space, amenities, tenants, unit numbers, rental rates, and lease expiration dates.

.03 Automated systems have supported the growing trend to decentralize property management. Using computers, property managers at the site can transmit more timely reports on collections, management, and leasing.

.04 In selecting automated systems for a property management firm, a critical consideration is the type of property being managed. A single firm may manage several types of properties, such as multi-family units (conventional and subsidized), single-family homes, commercial space (retail, office, and industrial), and possibly even mini-warehouses and marina boat slips. Each type of property has specific management requirements.

.05 Residential property owners, for example, may offer amenities such as recreation, laundry facilities, parking facilities, and security. Some residential properties require unique accounting and reporting services because they are regulated by local, state, or federal housing programs. Cooperatives and condominiums are similar to residential rental properties, except that the residents are generally the owners. Furthermore, property managers may manage one property with many owners.

.06 Commercial property requirements depend on whether the facility is an office, a retail business, or an industrial site. A single tenant may occupy a considerable amount of space. In a retail facility, such as a strip shopping center or a mall, the rent is frequently based on the tenant's gross sales.

.07 No matter what type of property the firm manages, the property manager's responsibilities usually involve collection, maintenance and repair, occupancy, tenant matters, security, and services.

50/515 ISSUES AND CONCERNS

.01 The specific features required in an automated property management system vary according to the type of property being managed. However, all property management systems should provide the following basic functions:

- Accounting of both cash and accruals
- Flexible reporting to management and owners
- Processing of data required for government-subsidized properties, if included in the portfolio

50/520 APPLICATIONS

Rent Collection and Control (Accounts Receivable)

.01 When selecting a computer system, the practitioner needs to review the client's existing accounts receivable system for any special requirements. An automated system should assist the property manager in monitoring rent collections and delinquencies. The new system must also be flexible and meet any special needs the owner may have.

.02 A good rent collection and control system can—

- *Automatically calculate rent and other charges*. A good system maximizes revenues by automatically generating all standard fixed charges as well as assessing other fees, such as late charges, nonsufficient fund (NSF) fees, common-area maintenance charges, and insurance charges. It should also automatically charge rent increases when appropriate.

- *Provide detailed and summary reports*. The system should produce a rent-roll report, which summarizes collection information about each tenant. This report lists delinquent balances, current balances, collections, and prepaid amounts. Firms may require a weekly or monthly report, but the system should have the ability to print it at any time.

- *Report collections by type*. Firms should have the ability to identify the type of revenue they collect.

- *Track special concessions*. To attract tenants, managers may offer concessions, such as a month of free rent. The system should be able to track different concessions and provide reports by concession type in order to properly identify and monitor concession losses.

- *Speed up the reporting process*. With a good report system, the firm can easily access information, enabling it to make decisions more quickly and better manage the property.

- *Monitor deposit liability*. An effective rent collection and control system will provide details of all changes to the deposit liability. It should also be able to calculate and report deposit interest.

.03 Other features and reports may be required depending on the type of property managed by the firm. The following are some possible special requirements:

- A firm may need to be able to allocate special assessments for condominiums.

- For commercial properties, the system must be able to calculate rents that increase according to an index based on operating costs and economic conditions. The system may also need to calculate charges to tenants for some property expenses, such as taxes and insurance, on a square-footage basis. In addition, the system may need to determine maintenance and common-area charges according to square footage or length of tenancy.

- Firms frequently base retail property rent on the percentage of sales.

- For an apartment complex, a firm may need to track the interest earned on security deposits.

.04 The flowchart (figure 50/500) illustrates typical computer applications for a property management firm. The size of the firm may dictate other specialized applications.

Property Management

.05 The purpose of an automated property management system is to provide information for effective management and control of day-to-day operations, as well as management reports and analyses for planning and long-term decision making. The system should provide analyses of property, units, tenants, leases, and maintenance programs.

.06 **Property Analysis.** The property analysis feature should track the following information about a property:

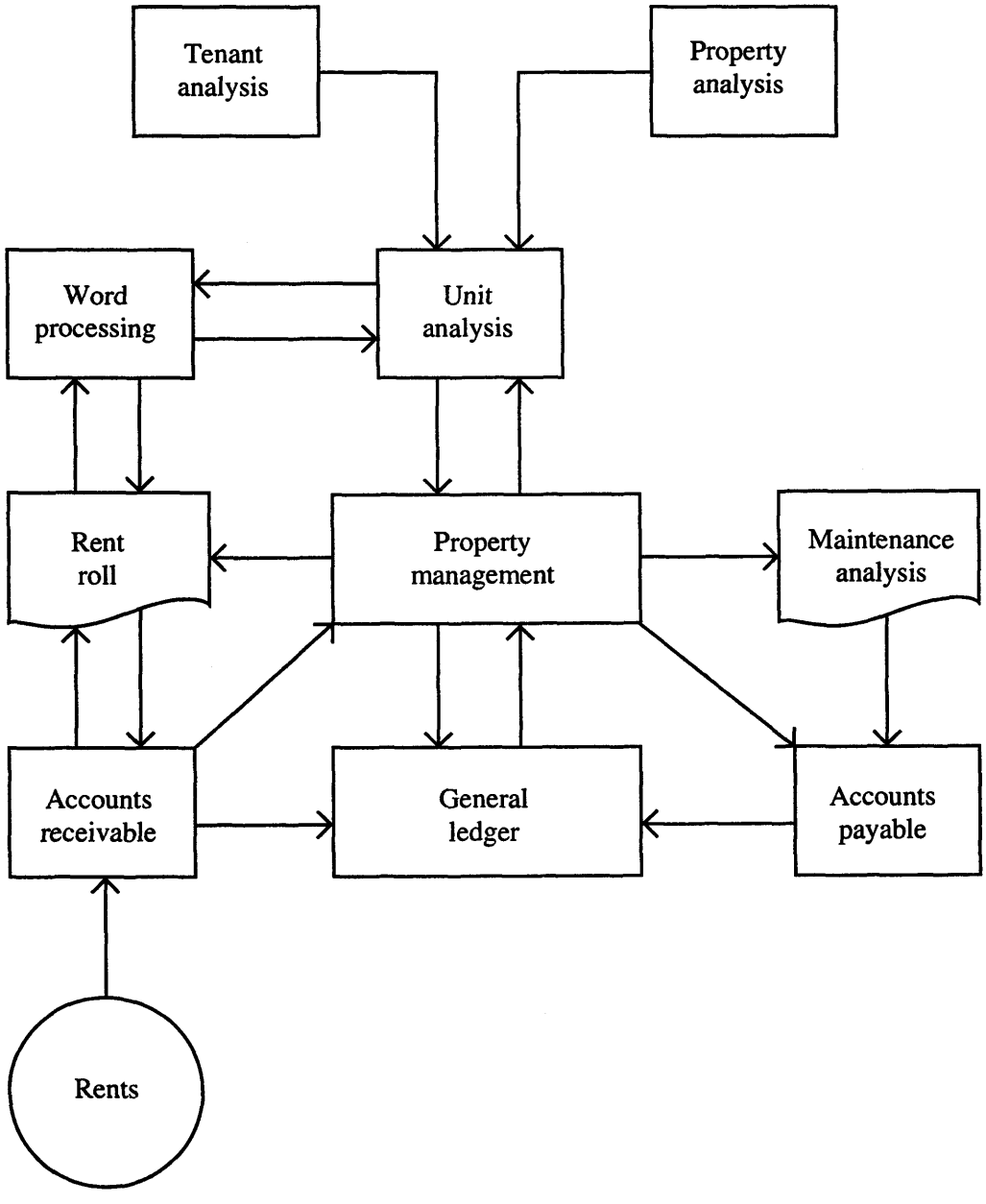
- Vacancy loss and occupancy statistics
- Gross rent potential
- Statistics on the number of move outs, move ins, rentals, and renewals
- Static information such as the number of units, the net leasable square footage, and the property address

.07 **Unit Analysis.** In commercial property, a unit may simply be the space rented by the tenant. Residential units are more clearly identified by unit type, such as a one-bedroom garden apartment or a two-bedroom town house. The property management system provides unit analysis by reporting for each unit of a property such information as market rent and occupancy status, as well as occupancy statistics by unit type for the entire property. The description of a unit may also include the square footage, the number of rooms, actual rent, and potential rent.

.08 **Tenant Analysis.** The firm maintains information about each tenant. The profile of a retail tenant usually contains such information as the gross and net leasable area of the property and the volume and history of the tenant's sales. For residential properties, the firm may maintain such demographic information on residents as age, marital status, number of children, and income. This information helps the firm make informed decisions on how to market the property.

.09 **Lease Analysis.** Information about the lease may be recorded in a separate file or as part of the unit or tenant file. This information includes the beginning and ending dates for the current lease and for renewal leases, fixed charges, mortgage amount, payment amount, payment-due date, the number of times the tenant's payment has been late or subject to NSFs, and the amount of security deposits.

Figure 50/500
Common Property Management Computer Applications



.10 Commercial leases contain such additional data as formulas for calculating escalation rates and their effective dates, base-year exemptions, renewal options, common-area maintenance fees, taxes, utility fees, operating cost assessments, and rent as a percentage of sales. For retail properties, the lease analysis feature should calculate rent based on a percentage of sales.

.12 **Maintenance Analysis.** Most automated property management systems include a property maintenance application, but firms can also purchase a stand-alone system. This application facilitates preventive maintenance by tracking the maintenance and repair history of property and equipment.

.13 Maintenance analysis programs vary in flexibility and complexity. An effective system will track the type of maintenance performed, the amount of time required to complete the work, and the property and unit where the work was performed. It should produce the work order and automatically schedule routine or preventive maintenance. At some larger properties, an inventory control feature may be integrated with the maintenance management system.

Accounts Payable

.14 An automated accounts payable system controls payments to vendors. The system prepares checks and provides forecasts of cash requirements to help the manager plan expenditures and determine which invoices to hold for future payment. An effective payables system has a central disbursement account. This feature allows, for example, the manager to write a single check to a vendor for transactions involving several properties. In addition, the system should be able to handle multiple checking accounts for each property, monitor discount due dates, maintain vendor history, and produce miscellaneous 1099s.

General Ledger

.15 The general ledger software a firm selects to automate the owner's accounting records should perform several functions. It should report information by property, as well as consolidate selected property statements. It also needs to be flexible in building the chart of accounts. The system should provide the basic balance sheet, income, and other financial statements, journals, and ledgers. The firm should be able to customize financial statements and print them out at any time. The general ledger package should produce supporting schedules and have the capability of developing statements that compare budgeted and actual figures or current and prior year figures.

Word Processing

.16 Managing properties involves a large amount of paperwork, including leases, government reports, eviction notices, delinquency and collection letters, and other correspondence to tenants, on-site managers, and vendors. A word processing system will enhance the efficiency with which these documents are handled. Word processing helps property managers to edit typed documents easily and quickly. They can also retrieve documents easily and revise them with information pulled from the system.

Market Analysis

.17 Market analysis is an important feature of the property management system. It enables property managers to use their marketing and advertising dollars more effectively. In their competitive market, property managers need current market data. When an economic downturn triggers a drop in occupancy, for example, a data base system can provide information about prospects, community profiles of tenants, and effective promotion methods. It can also analyze prospect and traffic information to identify the best sources of the target profile. For example, it can track prospective renters classified by marketing source. Many firms have used this analysis to maximize the effectiveness of their expenditures for marketing.

Other Applications

.18 Other applications that may be useful to property management firms are inventory, payroll, project management, job cost, and construction modules. The firm should evaluate the feasibility and cost effectiveness of automating these applications. Most accounting software packages include inventory and payroll modules that are integrated with the general ledger. A payroll module should allocate administrative payroll expenses among the properties in the general ledger. Project management, job cost, and construction modules may help to monitor and control project development costs, such as those associated with contracts with general contractors, change orders, and professional fees charged to jobs.

Communications

.19 The growing trend to decentralize the management of properties has increased the importance of communications. This is especially true in firms that manage residential sites and have a system at each site designed to communicate with a central location, typically the regional or home office. At each location, personnel can transmit accounts receivable, accounts payable, and other data to a central system for control, consolidation, and financial reporting. It is usually efficient for a firm to process receivables at the site and then communicate summary or detailed information to the home office. Firms that manage only one property should consider selecting a system to which they can add communications as the property portfolio expands.

50/525 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Code

.01 The Standard Industrial Classification (SIC) code maintained by the Department of Labor for firms that own, operate under, or manage real estate for a specific purpose is 6711. This code is required on certain governmental filings and can be used to obtain demographic information regarding the property management industry from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations

.02 The following is a list of organizations that are sources of further information about the property management industry. Trade publications are another source of information and ideas. In addition, local chambers of commerce can provide the names of real estate organizations in a particular area. The National Association of Realtors (NAR) and the Institute of Real Estate Management (IREM), both listed here, have established real estate software guidelines that will be helpful in selecting and evaluating computer systems. Ratios from on-line third-party data bases and publications such as those of Robert Morris Associates are also good sources of information.

American Industrial Real Estate Association
Sheraton Grande Office Center
345 S. Figueroa, Suite M-1
Los Angeles, CA 90071
(213) 687-8777

Apartment Owners and Managers Association of America
65 Cherry Plaza
Watertown, CT 06795
(203) 274-2589

Building Owners and Managers Association International
1201 New York Avenue, N.W., Suite 300
Washington, DC 20005
(202) 408-2662

Institute of Real Estate Management
430 N. Michigan Avenue
Chicago, IL 60611-4090
(312) 661-1930

International Council of Shopping Centers
665 Fifth Avenue
New York, NY 10022
(212) 421-8181

National Apartment Association
1111 14th Street, N.W., Suite 900
Washington, DC 20005
(202) 842-4050

National Association of Housing Cooperatives
1614 King Street
Alexandria, VA 22314
(703) 549-5201

National Association of Realtors (NAR)
430 N. Michigan Avenue
Chicago, IL 60611-4087
(312) 329-8200

National Property Management Association
14618 W. 6th Avenue, Suite 105
Golden, CO 80401
(303) 278-4239

National Society of Professional Resident Managers
1133 15th Street, N.W., Suite 1000
Washington, DC 20005
(202) 429-9440

Property Management Association of America
8811 Colesville Road, Suite G106
Silver Spring, MD 20910
(301) 587-6543

APPENDIX 50/D

CHECKLISTS AND SAMPLE REPORTS FOR PROPERTY MANAGEMENT FIRM AUTOMATION ENGAGEMENTS

The checklists contained in section three of this volume provide most of the information necessary for planning and implementing an automated property management system. However, a few additional items that may require attention are covered in the following checklists. In addition, the sample reports illustrate the output of some of the features of a property management system.

Exhibit 50D-1

Checklist for a Residential and Commercial Property Management System

Features	*Required*	*Desired*	*No Need*	*Notes*
Multiple properties processing	_____	_____	_____	_____
Accrual or cash-basis accounting	_____	_____	_____	_____
Property description	_____	_____	_____	_____
Owner information	_____	_____	_____	_____
User definition of—				
Up to 25 income types	_____	_____	_____	_____
Up to 12 marketing sources	_____	_____	_____	_____
Up to 10 concession types	_____	_____	_____	_____
Maintenance of management contract information	_____	_____	_____	_____
Management Fee Calculation				
Fixed	_____	_____	_____	_____
Percent of receipts	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Receivables processing for future, current, and former tenants				
Tenant statements printing				
Retention of up to 12 months of receivables history				
All fixed charges				
Manual ledger adjustments				
Late Fee Charges				
Fixed				
Daily accumulating				
NSF fees				
Month-to-month fees				
Deposit interest calculation				
Custom notices production				
Unit description				
Unit comments				
Lease begin and end dates				
Renewal-lease begin and end dates				
Tenant demographic information				
Applicant demographic information				
Rental date				
Move-in date				
Tenant phone number				
Eviction status				

Features	*Required*	*Desired*	*No Need*	*Notes*
Cash-only status	_____	_____	_____	_____
Tracking of number of NSFs	_____	_____	_____	_____
Allowance for up to 10 fixed charges	_____	_____	_____	_____
Rent concession over lease period scheduling	_____	_____	_____	_____
Tenant locator provision	_____	_____	_____	_____
Prorating of rent at time of move in and move out	_____	_____	_____	_____
Automatic application of receipts	_____	_____	_____	_____
Processing of receipts for nontenant-related income	_____	_____	_____	_____
Correction of receipt posting errors	_____	_____	_____	_____
Tracking of amount of traffic by marketing source	_____	_____	_____	_____
Tracking of amount of traffic by leasing agent	_____	_____	_____	_____
User-defined marketing sources	_____	_____	_____	_____
Internal data backup and restoration	_____	_____	_____	_____

Exhibit 50D-2

Checklist of Reports

Features	*Required*	*Desired*	*No Need*	*Notes*
Rent roll	_____	_____	_____	_____
Aged account receivable ledger	_____	_____	_____	_____
Receipts posting register	_____	_____	_____	_____
Lease expiration	_____	_____	_____	_____
Month-to-month tenant	_____	_____	_____	_____
Availability	_____	_____	_____	_____
Vacancy loss	_____	_____	_____	_____
Delinquency	_____	_____	_____	_____
Security deposit	_____	_____	_____	_____
Property list	_____	_____	_____	_____
Unit list	_____	_____	_____	_____
Tenant list	_____	_____	_____	_____
General ledger distribution	_____	_____	_____	_____
Expected move in	_____	_____	_____	_____
Expected move out	_____	_____	_____	_____
Mailing labels	_____	_____	_____	_____

Exhibit 50D-3

Checklist of Special Features for a Commercial Property Management System

Features	*Required*	*Desired*	*No Need*	*Notes*
Calculation of agent commissions				
Fixed amount	____	____	____	_____
Fixed percent	____	____	____	_____
Percent of rent	____	____	____	_____
Combination	____	____	____	_____
Fixed charges (monthly, quarterly, or annually)	____	____	____	_____
Percent of sales rents charges	____	____	____	_____
Multiple percent of sales rent breakpoints	____	____	____	_____
3 years of prior sales history	____	____	____	_____
User-defined store types	____	____	____	_____
Rent escalation formula				
Fixed amount	____	____	____	_____
Fixed percent	____	____	____	_____
Index	____	____	____	_____
Escalation base-year exemption	____	____	____	_____
Calculation and charging of tenant's share of expenses based on—				
Net leasable square footage	____	____	____	_____
Fixed percent	____	____	____	_____
Expense pass-through of base-year exemption	____	____	____	_____

Exhibit 50D-4

Checklist of Special Features for a Residential Property Management System

Features	*Required*	*Desired*	*No Need*	*Notes*
User-defined unit types				
Unlimited number of unit types				
Ability to change market rent by unit type				
Date that market rent last changed				
Last market rent				
Separate unit addresses				
Carpet color by unit				
Tracking of readiness of vacant units				
Up to 4 names per lease				
Security and pet deposits				
Production of a statement of deposit handling at move-out time				
Tracking of transfers of residents to other units				

Exhibit 50D-5

Checklist for a Word Processing System

Features	*Required*	*Desired*	*No Need*	*Notes*
Leases	_____	_____	_____	_____
Governmental reports	_____	_____	_____	_____
Delinquency/Collection letters	_____	_____	_____	_____
Integration with property management data files (property, unit, tenant, lease, and maintenance files)	_____	_____	_____	_____

Exhibit 50D-6

Sample Property Master Listing

12/31/xx
08:00:00

Hampton Crossing 00001-001
Property Information

Address: 4862 Hampton Crossing
Post Office Box 100292
Atlanta, GA 30144

Market Area: Southeast

Day phone: (404) 928-8811

Emergency phone: (404) 934-0101

Number of units: 192

Total square feet: 157,674

----------Takeover----------

Date: 09/01/xx
Occupancy: 85%
Gross Potential:
Purchase Price:

Manager: Ted Crawford

----------Management Contract----------

From: 09/01/xx

Through: 08/31/xx

Terms:

Comments:

Exhibit 50D-7

Sample Unit Profile

Residential

06/05/xx 08:00:00	Hampton Crossing 00001-001 Unit Profile
Unit #1:	A101
Unit type:	2BR/TH
Number of rooms:	5
Number of baths:	2
Square feet:	1,100
Description:	Overlooks pool and tennis courts Kitchen wallpaper replaced 03/15/xx
Occupancy status:	Occupied/No notice
Market rent:	$750
Last move-in date:	6/01/xx
Last move-out date:	05/15/xx
Comments:	

Commercial

06/05/xx 08:00:00	2400 Peachtree 00001-020 Unit Profile
Unit #1:	Suite 100
Tenant:	Smith Law Offices
Square feet:	1,500
Rent per square foot:	$7.50
Comments:	

Exhibit 50D-8

Sample Resident Profile

06/01/xx Hampton Crossing 00001-001
08:00:00 Resident Profile

Unit #1: A101

Tenant: Harold Miller	Sex: M	Marital status: Single
No. of children: 0	Employment: Industrial engineer	Income: $43,000
Work phone: 928-8787	Home phone: 988-5643	Pets: Dog
Marketing source: Sign		Birth date: 11/15/55

Exhibit 50D-9

Sample Lease Profile

Abstract Report

Owner:	Jones Corp.
Tenant account no.:	999-9999-99
Building:	101 S. Bemiston St. Louis, MO 63105

Tenant information:

Tenant name:	Public Relations Co.
Subtenant:	Public Relations Co.
Mail name:	Public Relations Co.
Sort name:	Public Relations Co.

Area/Space:	PT. 9th floor, 7,000 square feet
Guarantor:	
Rent:	$54,000.00 annually
Deposit:	$ 4,500.00 monthly
Lease date:	12/1/xx
Commencing:	1/1/xx
Expiration:	1/1/xy

Other information:

Abstractor:	John Mackey
Contact:	Susan Allen
Title:	President
Phone:	314/221-9937
Lease control no.:	
Lease form no.:	
Broker:	Goldwassen
Federal employee ID no.:	43-929999
Description:	Rent
Amount:	$ 4,500.00
Square feet:	7,000
Rate:	7.71

GLOSSARY

annual contributions contract A contract under which HUD makes payments to public housing agencies to cover debt service on public housing projects or to provide rent subsidies and administrative costs under the Section 8, Housing Assistance Payments program.

appraisal The establishment of cost or value by systematic procedures that include physical examination, pricing, and estimating by engineers. The most commonly used appraisal bases are cost, market, and income.

assessed value The value of property as appraised for taxation and other purposes. Real estate is appraised by an assessor on the basis of a field examination. The manager usually assesses personal property, such as furniture and appliances.

base rent The minimum fixed guaranteed rent in a commercial property lease.

common-area maintenance A retail tenant's payment of the pro rata share of common expenses, such as parking-lot maintenance, lighting, and landscaping.

damage charges and deposits When a tenant moves out, the property manager inspects the unit and levies any charges for damages. Often, the property manager obtains a damage deposit when the tenant signs the lease. Return of the deposit upon leaving depends on whether or not the property is damaged.

development costs Costs incurred in improving property and bringing it to operational status, as distinguished from the direct costs of construction of the property.

easement An interest in land owned by another that entitles the holder to a specific limited use. For example, an electric company may have an easement on a home owner's property allowing it to erect power lines.

escalation charges An increase to the current rental amount. The increase is usually based on a particular set of operating expenses or is tied to an economic indicator, such as the consumer price index (CPI). In the latter case, the lessor uses the annual percentage change in the CPI to determine a percentage change in the rent. If actual operating expenses are the basis, the manager prorates the excess expenses according to each tenant's square footage and charges them as additional rent. In many cases, the property manager estimates the expenses or uses monthly changes in the CPI to smooth out escalation collections over the year. At year-end, a final adjustment corrects errors in the estimate. Most commercial leases are long-term leases and include an escalation clause. This helps the property owner to combat rising costs.

escalation income Additional income derived from the tenant as payment of escalation charges.

escrow An arrangement such as a bond or deed in which a third party carries out the orders of a buyer and seller when certain conditions of an agreement are met.

fair market rent Rent, as described by HUD, for existing housing under the Section 8, Housing Assistance Payments program. Rent includes certain allowances, such as utilities charges (except for the telephone).

government subsidy program application A software program with the capability of providing demographic information about residents, such as family size and income, and properties for various subsidy programs such as those from the federal government, HUD, and state agencies.

gross family contribution The portion of the gross rent payable by a family eligible for housing assistance. It is the difference between the amount of the housing assistance payment and the gross rent.

gross rent The contract rent plus any allowance for utilities and other services.

gross potential rents Rents based on the current market rate.

ground lease Contract for the rental of land, usually on a long-term basis.

HUD-FHA The U.S. Department of Housing and Urban Development's Federal Housing Administration.

HUD-approved rent increase A rent increase for units of multi-family housing projects with HUD-insured and HUD-held mortgages. Rent increases are processed only on the owner's written request and are based on demonstrated expenses for project operations and debt service.

land improvements Property enhancements, such as paving, clearing, grading, fencing, landscaping, and adding sidewalks, sewer, water, and gas lines.

leasehold improvements Items required or negotiated by the tenant to improve the leased premises.

lien A claim against another that is satisfied by holding the other's property as security or by seizing and converting the property under procedures provided by law.

lien waiver Written evidence from the contractor or supplier surrendering the right of lien to enforce the collection of a debt against property.

low-income family A family whose income does not exceed 80 percent of the median income for the area, as determined by HUD, with adjustments for smaller or larger families. However, HUD may establish income limits higher or lower than 80 percent because of high or low prevailing levels of construction costs, unusually high or low incomes, or other factors.

mortgage insurance premium (MIP) A payment to HUD in consideration of the contract of insurance, usually 0.5 percent of the outstanding mortgage balance.

net lease A lease calling for the lessee to pay all fixed and variable expenses associated with the property. Also known as a pure net lease, as opposed to a gross lease.

off-site improvements Improvements outside the boundaries of a property, such as sidewalks, streets, curbs, and gutters, that enhance its value.

origination fee The fee a lender charges to prepare loan documents, make credit checks, and inspect and sometimes appraise a property. It is usually a percentage of the face value of the loan.

percentage rent A percentage of the tenant's gross business receipts constituting additional rent.

proration of common charges Common charges, such as common-area maintenance or property taxes, may be prorated among the tenants in proportion to square footage, percentage ownership, number of nonvacant units, or on some other basis.

rental concession A landlord's agreement to forgo part of the advertised rent in order to attract tenants

rent delinquency report A list of tenants who are not current in rent payments. It includes all information necessary for follow-up, such as property, unit, tenant, amount due, and telephone number.

rent history Documentation of the rent for a specified unit or property. This is useful in analyzing past trends and planning for future rent increases.

rent-roll report Details of the expected revenue for each property by tenant or unit. Revenue is broken down into current-period rent, previous-period charges not yet collected, and current-period miscellaneous charges.

rent-up period The time after construction that a rental property requires to achieve stabilized income and occupancy levels.

Section 8 contract A written contract between HUD and the owner to provide housing assistance payments to the owner on behalf of eligible families.

soft costs Architectural, engineering, and legal fees as distinguished from land and construction costs.

square-footage reporting Revenues and expenses can be reported on a dollars-per-square-foot basis, especially for properties that lease space on a square-footage basis or whose square footage is used to prorate common-area charges. Square-footage reporting allows management to compare revenues and expenses with those of certain other properties and with industry standards.

step-down lease A lease that provides for specified decreases in rent at set intervals.

step-up lease A lease in which the rent is fixed for the initial term and increases at specified intervals by predetermined amounts or by amounts based on periodic appraisals. Also referred to as a *graduated lease*.

transient tax Some states require a tax charge for an apartment or condominium used for less than a specific period.

triple net lease A lease calling for the lessee to pay all fixed and variable expenses, including insurance premiums, taxes and utilities, associated with the property. Also known as a *pure net lease*, as opposed to a gross lease.

vacancy report A summary of the units or floor space available at each property. The report provides all information, based on the unit or property profile, that accounts for the revenue lost because of vacancies. It is useful in marketing the space.

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50/600 AUTOMATING A RESTAURANT

50/605 INTRODUCTION

.01 Automating a restaurant's systems has a significant impact on its operations. Not only must employees learn new procedures, but management must also adapt to new methods and transactions. Effective inventory management, quick reporting of "hot" menu items, and daily sales and table turnover analysis are critical to a restaurant's success. Accordingly, this part of section one addresses the automation of such systems as sales analysis, menu selection, inventory control, payroll, cash control, and variance analysis.

50/610 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 Food-service operators are exploring different ways to respond to customer demands in an increasingly competitive environment. In response to diverse consumer tastes and lifestyles, some operators are rethinking their approach to establishing a market niche. They are changing their facilities and their menus to provide the quality of food and service expected by patrons. For instance, steak-house chains have added chicken and fish to their menus, and fast-food burger establishments now sell salads. Asian, Cajun, Italian, Mexican, and other ethnic cooking styles have increased in popularity, and restaurants are incorporating them into their menus. Restaurants have also adapted their menus to accommodate customers' interest in classic foods from the past as well as the trend toward "grazing," a dining style that offers a variety of buffet items rather than traditional service. Consumers' heightened awareness of the relationship between health and diet has resulted in more healthful menu selections as well as information on nutrition in menu descriptions.

.02 Rising building costs have prompted operators to seek alternative strategies for reaching or expanding markets. Mobile units, double-drive-through windows, drive-through-only units, and other nontraditional sites are receiving increased attention. Other options receiving greater consideration include renovation and joint ventures. For larger chains, foreign markets are a viable expansion alternative.

.03 To compete, operators are emphasizing promotion. Expenditures for advertising and promotional campaigns, such as coupon offers, have risen sharply in recent years.

.04 Today's restaurant competes not only through price and menu but also through overhead cost containment. A restaurant can increase operating margins by using a back-office system that provides accurate and timely information about which menu items to manage and their prices and seasonality. The practitioner needs to know, however, how

the effects of seasonality and business cycles vary with the type of restaurant. Furthermore, no industry-wide standards apply to projecting fluctuations in business volume.

50/615 ISSUES AND CONCERNS

.01 The major issues associated with automating a restaurant include choosing between an integrated system and stand-alone systems, deciding whether to purchase the systems from a single vendor or from several vendors, and ensuring that users are trained adequately.

Integrated Versus Stand-alone Systems

.02 When practitioners are selecting technology to automate a restaurant's systems, they need to consider whether stand-alone systems or an integrated system is appropriate. Each of the typical restaurant system modules can be a stand-alone system. Most restaurants, however, will benefit greatly from an integrated system that allows a seamless flow of information among all the modules. Data needs to be entered only once into an integrated system to update all related systems and reports. An integrated system also provides many economies in purchase price, training, and support. In addition to the typical restaurant applications, an integrated restaurant system may have applications for health and nutrition information, accounts receivable, accounts payable, word processing, and desktop publishing for menu revisions.

.03 Many software packages also integrate the cash register, kitchen, and stockroom systems. From a single point of entry, a server can direct information about hot and cold items to the appropriate part of the kitchen and drink orders to the bar, reduce inventory, and set low-stock flags on the order-entry system.

.04 Most integrated systems also contain a time-clock feature that records employees' time, accumulates their transactions for the shift, and captures their sales and tip totals. These reports are valuable to the manager for payroll, sales analysis, and staffing decisions. Integrated systems also provide promotional benefits by allowing accumulation of data about the effective use of coupons and other discounts.

.05 Integrated software is often specific to certain types of restaurants. Packages are available for pizza parlors, soda fountains, lunch counters, full-service dinner restaurants, and almost every other type of food-service establishment. These integrated packages provide reports designed specifically for the management of these types of restaurants. The practitioner needs to consider these packages as well as generic restaurant packages or individual modules.

.06 Compared with stand-alone systems, integrated systems are more complex, require more maintenance and management, and usually have a higher initial cost. Fully integrated

systems usually require more than one terminal except in the smallest restaurants. At a minimum, these systems require an order-entry terminal, management console and printer, remote kitchen and bar printers, and a cash drawer. The systems are available from vendors of point-of-sale systems and cash registers.

Single Vendor Versus Several Vendors

.07 Most restaurants will benefit from an integrated package supplied by a single vendor. Quite often, a vendor customizes a general-purpose accounting package for the food-service industry. A vendor may also bundle the hardware and software and provide supplies and ongoing support for both. A single vendor provides both the client and the practitioner with a single point of reference for upgrades. Multi-vendor software systems, on the other hand, require custom programming to bridge systems and may require re-entry of data.

.08 Most vendors of integrated systems provide an industry-standard output file (for example, an ASCII file) for use with word processing and spreadsheet packages. This output file is adequate for occasional use, but not for routine reporting or for transferring data among modules. Integrated systems provided by a single vendor use proprietary internal data transfer, which is faster and more efficient than using industry-standard data transfer among modules purchased from various vendors.

Staff Training

.09 Computer systems alter the way servers interact with both patrons and the kitchen. Training staff to use and accept the systems is therefore of great concern to any restaurant considering automation. Restaurants need to exert an extra effort in training because they usually have high staff turnover rates and can afford only minimal time for instruction.

.10 Most restaurant systems operate in a real-time mode. This means that when servers enter orders, they update the kitchen, storeroom, and cashier immediately. Mistakes by poorly trained personnel can cause out-of-stock conditions or a high volume of cancellations of orders that have been prepared.

.11 To prevent these situations, the restaurant provides each trainee with a training manual along with a sample table and server ID. The trainee uses dummy codes to learn the system without affecting the daily transactions. If this type of training program is not feasible, managers must monitor new employees closely to maintain the integrity of the system. Periodic staff training seminars conducted by the system vendor may also be useful.

50/620 APPLICATIONS

.01 The most commonly used computer applications for restaurants are shown in the flowchart (figure 50/600). Some restaurants, particularly larger ones, may benefit from other more specialized applications.

Menu Planning

.02 The key to a successful restaurant operation is to obtain the greatest possible return from each patron. Menu-planning software can help in determining the best-selling items, the most popular side dishes, and trends during busy periods. The software can produce useful reports for restaurant management, such as the percentage of overall sales that each primary menu item represents, the most popular price level, and the effect of menu specials on sales.

.03 Rapid changes in consumer tastes require restaurants to monitor and react to shifting demands for specific menu items. The recent interest in ethnic food, for example, compels restaurant managers to design menus that appeal to a diverse clientele while maintaining reasonable inventories, cost controls, and service styles.

.04 A menu-planning software package can address these needs. This software uses the restaurant's own recipes. Menu-planning software can calculate ingredient requirements (the bill of materials) based on the expected demand for both a particular menu item and several menu items. By allowing large-scale ordering of key ingredients, this capability supports effective banquet management as well as efficient daily restaurant operations.

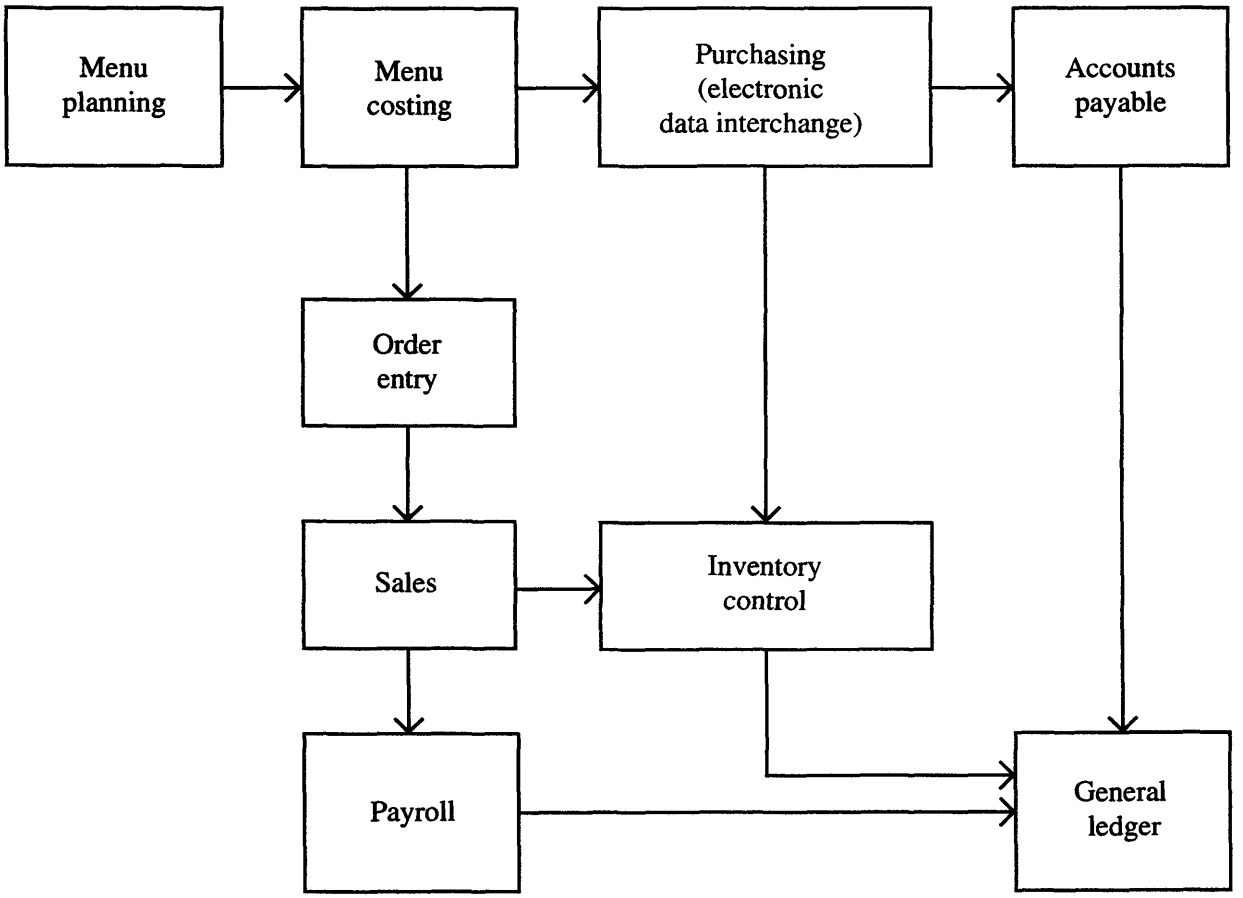
.05 Menu-planning software performs menu costing, which is vital to the profitability of a restaurant. Variances from standard cost will alert management to rethink menu prices or buying strategies. By allowing for changing prices of component ingredients and allocating overhead and direct labor costs, menu-planning software supports the restaurateur's pricing decisions.

.06 Menu-planning software used along with inventory control software can assist the manager in comparing actual and budgeted sales and in selecting overstocked items for daily specials. Several types of menu-planning software are available with varying capabilities and prices.

Inventory Control

.07 Inventory control is closely related to menu planning. While the menu-planning system indicates the amount of ingredients required, the inventory control system monitors the actual usage and the spoilage dates of individual items. Restaurant managers find it difficult to track each inventory item manually and therefore rely on periodic inventories

Figure 50/600
Common Computer Applications for Restaurants



and informal reorder points. However, combined with the menu-planning system and a point-of-sale device, the inventory control system can determine the items used, such as the number of steak dinners and chicken portions served.

.08 Restaurant operators need to forecast the sales of each menu item and correlate these projections with the expiration dates of inventory items. By dating each item, both manually and electronically, and using the oldest products first, the restaurant manager can prevent losses and customer health hazards resulting from spoiled food.

.09 For each inventory item, restaurants need to develop standard control units, such as pounds, bottles, pieces, and servings. Most computerized systems can convert bulk purchase units into individual serving units automatically within certain parameters.

.10 Inventory receipt procedures are critical to the success of a perpetual inventory system. Employees involved in the receipt function need to know the standard units used, the spoilage potential, special handling, weighing, and counting techniques, and the physical location of each inventory item.

.11 An inventory control system can also help to prevent shrinkage. Shrinkage affects every restaurant, especially establishments that serve liquor. An effective management tool is the shrinkage report from the inventory control system. This report may require periodic physical inventories, but it can alert management to trends such as chronic shortages of specific items.

.12 Automated inventory systems can provide daily stock status reports that identify fast- and slow-moving items. A status report that shows a traditionally slow-moving item as a frequent reorder item will alert management to the possibility of employee theft.

.13 Automated inventory records also enhance the use of cycle inventory counts. In a cycle-count system, the computer randomly selects items to be physically counted each day. This process has two benefits: (*a*) the restaurant does not need to shut down to perform the annual physical count and (*b*) the staff does not know which items will be counted and therefore cannot cover up thefts. The system can store cycle-count reports, including records of items that are over or under count. Auditors often rely on cycle counts rather than conduct a physical inventory. In addition to random cycle counts, daily counts of high-dollar and high-spoilage items provide management with timely information on these critical items.

Timekeeping and Payroll

.14 In addition to providing high-quality food and beverages, restaurants must also provide top-notch service. Attracting and retaining qualified people is sometimes the restaurant manager's hardest job. Automated payroll and timekeeping systems combined

with scheduling software can provide management with reports and tools that help to manage and motivate staff. An employee scheduling system helps restaurant managers assign employees efficiently. It is especially helpful to an operation with a large part-time workforce. Schedule changes can be made quickly and over- and understaffing can be detected in advance.

.15 The system can also identify serving trends and productivity differences. In analyzing productivity, the practitioner measures the impact of different serving policies, such as how much staff is assigned to each table, whether meals are prepared at the table or in the kitchen, and who picks up and serves the food.

.16 An integrated sales and payroll system is capable of calculating staff sales by item, especially promotional items, and of tracking the sales. Additional capabilities include analysis of gross profit by server along with the number of meals served.

.17 Integrated payroll and timekeeping systems can help track employee hours and, at the same time, provide an accounting system for tips. Employers may be required to report actual tips in employees' earnings statements for tax purposes. However, because accounting for cash tips is difficult, most restaurant managers rely on employees to report their own tips. With an automated system, management can record the server's ID and tip amount with each sale. Management can then report the tips along with the server's earnings or allocate them to other personnel as required by the establishment's policy. Most restaurants that accept charge cards pay tips to employees in cash at the time of sale rather than after the charge clears. Management can then account for these charged tips.

.18 Some restaurants integrate the sales and payroll systems and allocate a fixed percentage of each employee's sales to tip earnings. Tip allocation is required for large restaurants if employee reported tips are less than 8 percent of sales. Allocated tips must be included on the employee's W-2 report at year-end. Because tax laws constantly change, the practitioner needs to consult the current regulations on tip reporting before implementing an allocation system.

.19 Tip pooling is a common practice in many restaurants. In a pooling system, all servers combine their tips at the end of a shift. The busboys and other employees share a percentage and the servers divide the remainder. When the manager collects and allocates the tips, accurate reporting is possible if this information is entered into the payroll system.

Electronic Data Interchange

.20 Many restaurant purveyors currently accept orders directly into their computer systems through electronic data interchange (EDI). EDI reduces the lead times necessary in a manual system and gives the restaurant manager greater control over the purchasing function. Like systems developed for just-in-time (JIT) delivery on assembly lines, these EDI systems allow restaurants to place orders automatically with their suppliers, usually for delivery the next day, and eliminate the need for a phone call or sales visit.

.21 Using EDI with major suppliers, the restaurant purchasing manager can check prices, compare sales policies, and place orders directly into suppliers' order-entry systems. After delivery, the vendors transmit bills to the restaurant, which may settle its account with a wire transfer from its bank to the suppliers' accounts.

Variance Analysis

.22 Standard cost analysis is a new concept to the small restaurateur. Multi-location chains and the fast-food industry have long used variances to monitor their performance. The practitioner considers whether the restaurant's automated systems need the ability to compare standard inventory and labor rates with actual rates. Using variance analysis, a restaurant manager can determine whether to change menu pricing, place greater control on shrinkage or spoilage, or increase or reduce staff. A purchase variance analysis may highlight inefficiencies in order placement, which management can then address.

Cash and Sales Controls

.23 Automated systems also enhance controls over cash and sales. Most restaurant systems require management approval to void a transaction once it is begun. Management approval is also required to transfer a table to another server or to issue a discount. All such special transactions need to appear on a daily exception report.

.24 Most systems keep customer checks open by table and invoice number and require that all open checks be closed daily. At the end of the meal, the check is cashed out through the cash register and into the sales system. The cash register classifies each transaction by type of payment (check, cash, charge card, or house account) for a detailed reconciliation of orders entered, cash received, and deposits made. Someone other than a server or cashier summarizes the reconciliation on a daily cash report, which is supported by copies of the system sales report and bank deposit slips. The system may also be integrated with the inventory system to accurately reflect a reduction of inventory.

.25 No internal control system is foolproof, nor will an automated system guarantee employee honesty. At best, an automated system will enhance existing internal controls by adding a degree of segregation and exception reporting. The practitioner needs to evaluate the total internal control environment, considering both human factors and system capabilities, before relying on any system of controls.

50/625 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Code

.01 The Standard Industrial Classification (SIC) code maintained by the Department of Labor for the restaurant (non-fast food) industry is 5812. This code is required on certain governmental filings and can be used to obtain demographic information regarding the restaurant industry from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations and Publications

.02 The Research and Information Service Department of the National Restaurant Association (NRA) publishes several reference works that may help practitioners in selecting and implementing computer systems. These materials are comprehensive, and the NRA updates them regularly. They include useful checklists and vendor contract information. The publications include the following:

Directory of Computer Hardware and Software for the Food Service Industry. Biennial.
How to Prepare a Restaurant Operations Manual. 1982.
Restaurant Industry Operations Report. Annual.
Safety Operations Manual. 1988.
Uniform System of Accounts for Restaurants. 6th ed. 1990.

The National Restaurant Association is located at 1200 17th Street, N.W., Washington, DC 20036. The telephone number of its Research and Information Services department is (800) 424-5156.

.03 Another useful publication is the *Franchise Annual* published by Info Press, Inc., 728 Center Street, Lewiston, NY 14092. Other information sources include the following:

Foodservice and Lodging Institute
1919 Pennsylvania Avenue, N.W.
Washington, DC 20006
(202) 659-9060

International Caterers Association
220 S. State Street, Suite 1416
Chicago, IL 60604
(312) 922-0966

These organizations sponsor national and regional trade shows.

.04 These are only a few of the reference sources available. The practitioner can get more information from other trade associations and from local chambers of commerce.

GLOSSARY

bill of materials A listing of ingredients that indicates the quantities required to meet the anticipated demand.

cash control Internal accounting controls for cash transactions.

electronic data interchange (EDI) Transmission of business documents (purchase orders, invoices, and payments) between vendors and customer computer systems.

grazing A style of food service that allows customers to select all components of their own meal from a menu or buffet. Salad bars and brunch buffets are examples of grazing.

inventory control Monitoring of inventory levels and reorder points.

local area network (LAN) A system that links diverse or similar electronic devices. Users can process data independently and communicate with other users.

margin management The practice of basing menu prices on direct costs to achieve a defined gross profit margin.

menu selection Items and prices to be included on the current menu.

multi-user system A computer system that gives two or more users simultaneous access to central data and programs.

point of sale (POS) A system in which transactions take place at and are entered into electronic cash drawers that immediately update inventory and other accounting functions.

shrinkage Inventory lost by spoilage or theft.

tips Gratuities paid directly to the server by the customer. Tips are reportable income; employers are responsible for taxes, both withheld and non-withheld, on this income.

vertically integrated restaurant software An industry-specific software system that joins the key control points of an establishment and provides industry-standard reports.

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50/700 AUTOMATING A RETAILING BUSINESS

50/705 INTRODUCTION

.01 Automation of a retail business is often necessary if the merchant is to maintain a competitive advantage. The critical components of a retail business are proper management and composition of inventory and timely and accurate reporting of sales. Therefore, this part of section one discusses sales and merchandising, inventory management, and purchase-order systems for retailers. In addition, it addresses issues related to the sales transaction, such as bar coding, the wanding of pre-ticketed merchandise, electronic data interchange (EDI), polling of cash-register-stored transactions, and point-of-sale alternatives.

50/710 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 Retail stores are generally required to record and report large volumes of transactions. This task has been difficult because of the need to report product variety, such as size, color, and vendor. In fact, this data management problem has resulted in retailers commonly using the gross-profit method of inventory valuation to determine the cost basis of inventory. Historically, retailers calculated the cost of sales using the gross-profit calculation simply because systems were unable to capture data for specific item identification. Now, however, point-of-sale technologies have advanced rapidly, allowing accurate and timely reporting of each transaction.

.02 Retailers compete not only on the basis of price and service but also on the basis of efficiency. With the emphasis on margin management and return on investment for inventory purchases increasing, retailers need to reduce overhead expenses while providing accurate and timely information to merchandisers about purchasing activity (for example, what items are purchased, when, and for how much). The successful back-office system provides such information cost-effectively.

50/715 ISSUES AND CONCERNS

.01 The retail industry's primary issues and concerns have remained the same over the years. They include improving buying methods, maintaining lower or more efficient inventory levels, and managing markdowns and merchandising more effectively. The increasing availability of information management systems that are affordable and cost-effective will significantly affect the future conduct of retail businesses. How management responds to the ability to analyze thousands of transactions can determine competitiveness and marketing success.

50/720 APPLICATIONS

.01 The nature of retailing requires accuracy in and control over the purchasing and inventory functions. The flowchart (figure 50/700) shows how these two functions are integrated with the most common applications found in the retailing industry. The size of the retailing operation may necessitate implementing other specialized applications.

Purchasing and Inventory Management

.02 The retail system concept begins with a retailer's decision to purchase inventory from suppliers, which is documented with a purchase order. With reports of inventory sold, transferred, and received, the retailer can monitor orders against minimum and maximum quantities and planned and budgeted purchases. By comparing orders against budgeted purchases, the retailer can prevent unnecessary and inappropriate buying, which often results in markdowns, slower inventory turnover, and profit-margin erosion.

.03 Typically, a purchase order gives notice to central receiving of an on-order condition and allows it to receive inventory. When merchandise is received, the retailer can check it against back-order and open-order conditions. An automated receiving system can enter items, mark them received, and compare them to the original purchase order. After this verification, the system generates inventory tickets, often from a printer in the receiving area. Generally, inventory items are marked with identification data that conform to the uniform price code (UPC) used in bar-coding tickets, which is controlled by the National Retail Merchants Association (NRMA).

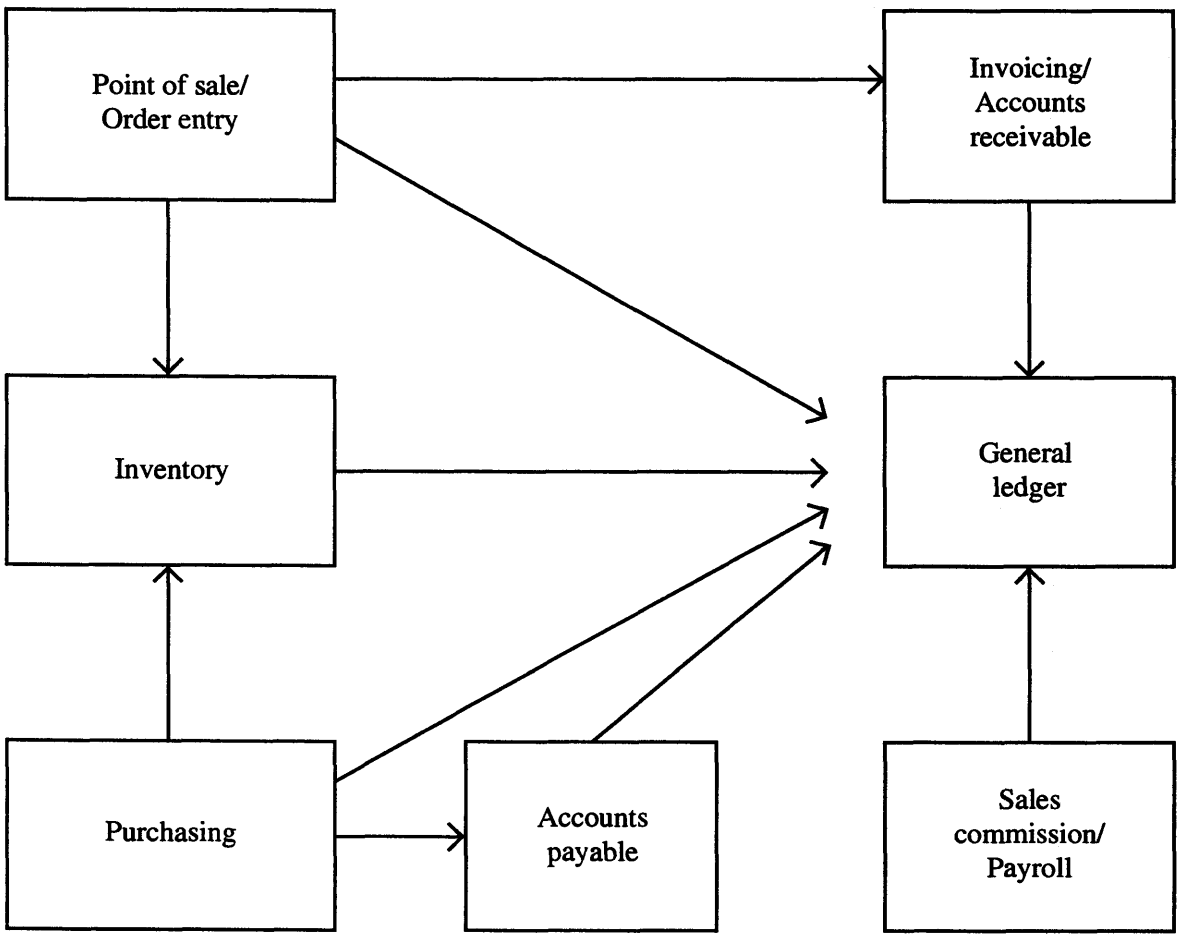
.04 The purchasing and order system needs to document sales, returns, receipts, transfers, and adjustments.

.05 In evaluating and selecting a system, the practitioner considers whether distribution is centralized or decentralized (including whether stores receive direct and drop shipments). The practitioner also considers whether the system can generate the following reports related to inventory control and purchase-order management: open, late, and refused orders; the purchase-order journal; receiving register and exceptions; and the inventory stock ledger, adjustment list, and valuation.

.06 In addition to these reports, the system needs to provide an inventory analysis by department, classification, and stock-keeping unit (SKU), including size, color, location, and price. This statistical analysis can incorporate monitoring of sales rate, inventory turnover, aging, and buyer performance.

.07 **Ticketing.** Merchandise is generally ticketed at the receiving site with SKU data. The ticketing process provides security and is also a key to inventory management and control. Since ticketing is highly labor-intensive, the retailer may need several ticketing machines. The machines made by old line-labeling companies, such as Dennison and Kimball, produce two-part tickets. The data that is on the tickets can be entered into the

Figure 50/700
Common Retailing Computer Application Areas



electronic cash register by a salesperson either by keying it or by scanning a bar code or magnetic strip.

.08 Other marking methods include the following technologies:

- *Print only*. The merchandise information is printed on the ticket in standard letters and numbers.
- *Print-punch*. The merchandise information is both printed and encoded in a series of holes punched in the ticket.
- *Magnetic*. The information is encoded in the ticket using magnetic tape similar to the stripe on a credit card.
- *Bar code*. The information is encoded in a series of bars of different sizes. Bar codes are either black and white or three-color (usually green, black, and white).

.09 The SKU provides a basis for collecting data and transferring it to the sales merchandising and inventory control systems. Although the objective is to control inventory at the SKU level, certain merchandise lines may be controlled only at the class level.

.10 **Inventory Control.** In order to provide an adequate information base to monitor and evaluate inventory turns, year-to-date gross profit, and fast-moving merchandise, the inventory management and control system may need to maintain the following data:

- SKU
- Season
- Region
- Store
- Warehouse
- Division
- Department
- Latest cost and average cost
- Markup and markdown flags
- Standard supplier name
- Class

- Subclass
- Description
- On-hand and on-order status
- Buyer
- Vendor
- Retail price
- Promotion, regular, or sale item identifiers

.11 The practitioner carefully considers the appropriateness of the client's inventory valuation principle as well as the calculation methodology. With the advent of cost-effective computerized systems, other pricing methods, such as the Lifo, Fifo, and average-cost methods, can replace the gross-profit method of inventory cost calculation.

.12 **Point of Sale.** The electronic point-of-sale system (POS) is pivotal to the modern retailer's data processing system. POS serves a dual role in the retail operation. First, the terminal functions as a cash register in completing the sales transaction. Second, it provides much of the data for other computer systems. All other primary retail functions become eligible for automation because POS can provide the accurate, timely data such automation requires.

.13 POS affects three areas of operations: selling floor, store level, and central office (back office).

.14 *Selling floor.* On the selling floor, POS facilitates four key functions: cash sales, credit sales, merchandise data recording, and customer service. The focus of retailing is the sales transaction. POS helps speed sales transactions and ensure accuracy.

.15 A vital by-product of the automated sales transaction is the instantaneous recording of merchandise data. As the sale is entered into the register, POS records information about the purchased item that can be used for merchandise control. These data include the department number, and vendor, and the classification, style, size, color, quantity, and price of the item.

.16 With this up-to-date record keeping, selling-floor personnel can give customers accurate information about merchandise. They can tell the customer quickly if an item is out of stock, on order, or available at another location. Thus POS can improve interaction with customers as well as facilitate the sales transaction.

.17 *Store level.* POS assists store management in several important tasks. The daily compiling of sales data can be done automatically by the POS device and transmitted to the

data processing center. The sales audit is the routine whereby store management balances registers, deposits cash, calculates salesperson commissions and productivity, clears and resets cash registers, reviews sales checks and credits for accounts receivable, prepares store flash-sales reports, and extracts tax information. POS does many of these tasks automatically, enabling the audit to be completed more quickly and accurately.

.18 *Central office*. The back or central office is where point-of-sale data from the store are processed and analyzed. Not all retailers have reached this level of sophistication, but many are working toward this extension of POS.

.19 Accounts receivable uses POS data for credit authorization, customer billing, and bill collection. For accounts payable, the timely data provided by the POS system allows purchasers to pay bills promptly, to take advantage of discounts, and, when POS is tied into the purchase-order system, to pay only for merchandise received.

.20 The merchandisers in the purchasing department rely heavily on POS data to replenish stock quickly, to take advantage of special offers, and to plan purchases. Sales analyses can be made daily, even hourly if necessary, with the timely reports provided by POS. Some systems will generate inventory purchase orders as customer sales orders automatically reduce inventory.

.21 The major components of the POS system include a terminal, wands or scanners, collectors or concentrators, store controllers or computers, a modem, a central computer, and software.

Sales and Merchandising

.22 The sales transaction usually involves completing a numbered sales ticket. This sales ticket is the basic data source for any retail sales system, and its collection and entry either at the point of sale or later in the back office provide a foundation for the sales reporting system. The extent of the information reported will depend on the capabilities of the system. For example, if electronic cash registers (including personal computers) are the main checkout device, information such as extended price, sales tax and date, store number, and even price probably will be available at the data entry point. Regardless of the device, the following standard sales information needs to be captured:

- Sales ticket number
- Sales type (e.g., cash, charge, or return)
- Merchandise classification, size, color, and quantity
- Date of sale, store number, and salesperson identification

- SKU
- Unit price, extension, subtotal, and final sales total

.23 Generally, at the end of the day the sales tickets are batched and balanced against control totals according to internal procedures. Following this close-out process, personnel send the transactions to the back office for a sales audit. The audit can be done electronically by a host computer that accesses the store registers during off-peak hours. The system edits transactions against master files, returning exceptions to store personnel for re-work. From the data input from each sales ticket, retail managers can receive daily sales reports for the entire business, each division, and each store, with totals for month and year to date. The basic reports need to include the following information:

- Sales audit detail
- Sales journal
- Store and department ranking
- Sales by SKU, classification, price point, margin, and inventory turnover
- Sales audit, gross profit, sales commission, and general ledger summaries
- Salesperson ranking and productivity
- Cash-over and cash-under reports

Accounts Receivable and Credit Authorization

.24 A critical decision that the retailer faces is whether to extend credit to customers. If the retailer decides to carry and manage receivables, the related system capabilities need to be in place. Generally, this involves a large number of accounts with small balances and therefore may require significant disk storage. In addition, the system will need to generate customer statements. The practitioner also considers systems for mailing and for providing credit and collection staff access to receivables information.

.25 Most retailers use the balance-forward method rather than the open-item method for customer accounts statements when they add finance charges to unpaid balances. When retailers also allow payments and tender from other credit sources, such as Mastercard and American Express, they use two important controls: credit limits and authorizations at the point of sale. Although on-line credit authorization services involve another automation expense, most retailers subscribe to them and are particularly vigilant about unauthorized credit card use.

Customer Information System

.26 The cash register can be a very important data-gathering device in support of a customer information system. The register will record the kind of transaction and the merchandise sold.

.27 A data base of detailed information about customers and their purchases can add value in several areas. Retailers can analyze purchases to determine customer buying habits. They can base advertising strategies and auxiliary services on customer demographics.

.28 The customer information system can support a direct-mail program, and this program can, in turn, provide feedback to the customer information system. To supplement existing business, retailers may offer products in the monthly billing statement or as part of a focused marketing effort. A system that provides appropriately researched customer lists and knowledge of purchase demographics can assist in cooperative advertising agreements with vendors, boost sales in low-volume stores, and form the basis for joint ventures or strategic alliances. Sophisticated retailers use these data to expand a new line of business, achieve greater concentration in an existing product line, or simply take advantage of an opportunity for high-margin sales.

.29 Retailers can also use the customer information system, along with product-merchandise sales reports, to develop a catalog for home shopping, a rapidly emerging trend in retailing. In addition, they can use the data base to study buying trends and demographics in order to start a new business. National marketing groups, such as Home Shopping Network, have been looking for products to sell and are able to determine product acceptance from customer information systems.

Electronic Data Interchange

.30 Electronic data interchange (EDI) is the communication of business transactions in a standard format from computer to computer. EDI reduces the costs associated with business transactions and the cycle period for receipt of goods, and improves the accuracy and timeliness of transactions.

.31 Many small retailers transmit data to service companies, which, in turn, change the format in order to transmit the purchase orders to the vendor. EDI also facilitates invoicing and payment. Certain systems, often based on the personal computer, can communicate orders through a network. Although the ability to perform many of these functions has existed for years, rapid development of EDI in retailing came only with the advent of inexpensive hardware and advances in common, yet sophisticated, operating systems. In the future, common practice, as well as vendor expectations, probably will require small retailers to conduct business in this manner.

Accounts Payable

.32 The accounts payable system maintains control over payments to vendors. The retail process begins with a purchase order. To ensure intelligent purchasing practices and effective cost management, the payables system must provide price and payment data that allow the retailer to negotiate better buying terms and to age payables.

.33 An essential capability of the system is to match vendor invoices in both dollars and item quantity with purchase orders to maintain inventory control. This invoice matching also enables the retailer to analyze late merchandise receipts, determine which items are on order or back order, and forecast current and future cash flow needs.

Sales Commissions and Payroll

.34 Incentive compensation can influence sales margins and volumes. An automated incentive compensation system should be flexible enough to handle a variety of commission calculations and to track sales of both regular and special items for additional incentive or bonus compensation. This system can interface with the payroll module.

.35 Other than handling commissions, payroll accounting for a retailer normally has few unique requirements. The payroll application calculates and prepares employee payroll checks and maintains earnings records for tax and other purposes.

General Ledger and Financial Reporting

.36 The retailer can use a computerized general ledger and financial reporting system to automate the company's accounting books and records. The general ledger program needs to allow for departmental and divisional reporting and contain a flexible system for building the chart of accounts.

.37 The typical general ledger system provides a balance sheet, an income statement, other schedules, and custom financial statements. The system should be able to print reports and custom financial statements at any time.

.38 In addition, the system must allow the retailer to have several periods open at the same time in order to efficiently make the transition from month to month and year to year. Because of the immediate nature of POS transactions, inventory control, and merchandise planning, the system must be able to start a new month or year without having to close the prior period.

.39 The general ledger is the central focus of any integrated business computer system, and it automatically receives transactions from other systems. Many advanced automated systems transfer the general ledger transactions as they are generated in real time (a push system). Other systems require that client personnel transfer the transactions in batches

(a pull system). The advantages of real-time transmittal are instant posting to account balances and immediate access to current information and account balances. The advantages of a batch system are that transactions can be edited before they are posted to any account balance and the processing of batches can take place during off-peak hours, thereby preserving the speed of the central processing unit.

Personnel Scheduling

.40 Retailers generally require several employees to staff stores during open hours that vary by day of the week or season. Consequently, scheduling employees can be both difficult and time-consuming. Some integrated retail systems provide specialized modules to perform this task, and stand-alone scheduling software is also available at reasonable prices. Retailers can also use spreadsheets to automate this task.

50/725 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Codes

.01 The Standard Industrial Classification (SIC) code maintained by the Department of Labor for retail stores that carry a general line of apparel, home furnishings, appliances, and other merchandise normally arranged in separate departments and integrated under a single management is 5311. General stores which are similar establishments with fewer than twenty-five employees, have an SIC code of 5399. This code is required on certain governmental filings and can be used to obtain demographic information regarding retail practices from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations

.02 The practitioner can obtain further information on the retail industry from the National Retail Merchants Association, Information Services Division, 100 West 31st Street, New York, N.Y. 10001. Other trade associations and local chambers of commerce may also provide guidance.

APPENDIX 50/E

CHECKLISTS FOR RETAILING BUSINESS AUTOMATION ENGAGEMENTS

Section three of this volume contains checklists that provide most of the information necessary for planning and executing an engagement to automate a small retailing business. However, additional items that may require the practitioner's attention are covered in the following checklists, which are designed for use with a small retail business.

Exhibit 50E-1

General Retail Business Information Checklist

	Current	*Projected in 2 Years*	*Projected in 5 Years*
No. of warehouses	_____	_____	_____
No. of vendors	_____	_____	_____
No. of distribution systems	_____	_____	_____

General Ledger

Inventory management stock ledger reports _____

_____

_____

Overhead allocation method _____

_____

Prior-years'-volume analysis	*1st Year*	*2nd Year*	*3rd Year*
Beginning inventory	_____	_____	_____
Ending inventory	_____	_____	_____
Gross profit amount	_____	_____	_____
Gross profit percent	_____	_____	_____

Merchandise Planning

Does the company have the following:	*Yes*	*No*
Qualitative merchandise plan?	___	___
Six-month sales plan?	___	___
Six-month inventory (stocking) plan?	___	___
Six-month buying plan?	___	___
Six-month department plan?	___	___
Six-month store location plan?	___	___

Who determines markups? _____

_____

Who determines reductions? _____

_____

Estimated number of orders
purchased each year_____

Estimated number of items
shipped each year _____

Exhibit 50E-2

Small Retail Business Needs Assessment Checklist

Features	*Required*	*Desired*	*No Need*	*Notes*
General				
Multiple locations	_____	_____	_____	_____
Centralized record keeping	_____	_____	_____	_____
Automatic interfaces (EDI order entry, etc.)	_____	_____	_____	_____
Bar coding	_____	_____	_____	_____
Accounts Receivable				
Code system to retrieve invoice	_____	_____	_____	_____
Multiple sales tax rates	_____	_____	_____	_____
Add finance charges	_____	_____	_____	_____
Open-item or balance-forward method	_____	_____	_____	_____
Multiple billing cycles	_____	_____	_____	_____
Automatic assignment of customer account numbers to new accounts	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Inventory				
Inventory by location	____	____	____	____
SKU (stock-keeping unit) definition	____	____	____	____
Information by				
- SKU	____	____	____	____
- Season	____	____	____	____
- Region	____	____	____	____
- Store	____	____	____	____
- Warehouse	____	____	____	____
- Division	____	____	____	____
- Department	____	____	____	____
- Latest cost and average cost	____	____	____	____
- Markup and markdown flags	____	____	____	____
- Standard supplier name	____	____	____	____
- Class	____	____	____	____
- Subclass	____	____	____	____
- Description	____	____	____	____
- On-hand and on-order status	____	____	____	____
- Buyer	____	____	____	____
- Vendor	____	____	____	____
- Retail price	____	____	____	____
- Promotion: regular or sale item	____	____	____	____
Twelve-month plans at department or store location	____	____	____	____
Limitations on dollar amount by which purchase order can be generated	____	____	____	____
Reports for sales forecasting based on inventory patterns	____	____	____	____
SKU control by location	____	____	____	____
POS data communications	____	____	____	____
Sales reports to include returns and adjustments	____	____	____	____

Features	*Required*	*Desired*	*No Need*	*Notes*
Communication				
Data transfer from primary to secondary location	____	____	____	_____
Data transfer from secondary location to primary location	____	____	____	_____
Information and message access from one location to another location (i.e., inventory, inquiries)	____	____	____	_____
Customer Information				
Customer history				
1 to 3 years	____	____	____	_____
3 to 5 years	____	____	____	_____
5 years and over	____	____	____	_____
Customer information file				
- Name	____	____	____	_____
- Address	____	____	____	_____
- Credit card number	____	____	____	_____
- Salesperson	____	____	____	_____
- Contact	____	____	____	_____
- Phone number	____	____	____	_____
- Tax code	____	____	____	_____
- Vendor stock number	____	____	____	_____
- From date	____	____	____	_____
- To date	____	____	____	_____
- Ship to	____	____	____	_____
- Bill to	____	____	____	_____
Accounts Payable				
On-line access with purchasing and receiving for verification of inventory information	____	____	____	_____

GLOSSARY

back office Location where sales and inventory transactions are entered into the computer system after the original sale. The back office can serve as a data entry department for a retail store.

class Grouping of merchandise by color, size, price, or style.

collectors Components that store the data from one or more terminals. Also known as **concentrators.**

color matrix Quantitative function, determining the number of colors and the inventory level sufficient to carry them. Often as much as 90 percent of sales can be generated by 30 percent of the colors in an assortment.

drop shipments Merchandise that is ordered as a special order and delivered directly to the customer instead of to the retail store warehouse.

electronic data interchange (EDI) The sending of coded symbolic information such as purchase orders or sales orders from one computer to another in a machine-readable form.

host computer The central processing unit or main system of several retail locations, usually located in the home store or corporate location.

inventory tickets Inventory tickets may contain such information as price, department, vendor, style, color, size, season, and cost code. Tickets provide security and are the key to inventory management. Tickets are usually printed in the receiving area after the receiving report is matched with the original purchase order.

modem Device resembling a telephone that connects the store's POS terminal, controller, or concentrator with the central site.

National Retailer Merchants Association (NRMA) An association that provides information annually about sales volumes, inventory types, inventory trends, costs of sales, gross profit percentages, and so forth. The association also provides information about specific retail industry trends. See "Industry Information Sources" (¶ 50/725.02).

on-order condition A notification from the purchasing department to the receiving department that a purchase order has been generated.

point of sale (POS) A system for capturing detailed sales information at the time of the sale. Usually, a salesperson enters the data at a terminal where the sale takes place. The data is transmitted to other systems to accomplish such functions as recording sales documents, revising perpetual inventory records, authorizing credit card approval, and storing market research information.

price look-up control A capability built into electronic cash registers to store and retrieve item prices.

pull system The transfer and posting of general ledger transactions in batches, after the transaction occurs; sometimes referred to as **batch posting**.

push system The transfer and posting of general ledger transactions in batches as the transaction occurs; sometimes referred to as **real-time posting**.

scanners Devices that can be attached to the system or terminal for reading merchandise and price information encoded on the tags. Also known as **wands**.

size matrix A grid that includes the number of units available during the season, the percentage of each unit size available, the number of units sold, and the percentage of each unit size sold. Its purpose is to facilitate purchasing practices that concentrate the greatest inventory depth in the sizes that satisfy the greatest demand.

standard supplier A vendor who supplies a certain quantity of merchandise regularly to the purchasing department.

store matrix A grid that includes sales dollars, average transaction amount, average unit retail amount, inventory, markdowns, and gross margins. Its purpose is to compare activity among stores.

stock-keeping unit (SKU) The smallest unit for which sales and inventory data are kept. Information identifying the SKU is contained on the inventory ticket. The SKU can be either long or short. The long SKU contains all the information necessary to identify an item in an easily understood format. These are usually stubbed and mailed to the home office for manual recording. The short SKU is used more often for computer purposes. It contains sufficient digits to identify an item and to match it with information stored in the computer.

terminal The basic unit of the POS system on the sales floor.

uniform price code The price code used for bar-coding tickets.

vendor A merchandise supplier or merchandise resource. This includes manufacturers, wholesalers, and anyone who sells to the store.

wands See **scanners**.

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PART SEVEN—AUTOMATING A DISTRIBUTOR

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50/800 AUTOMATING A DISTRIBUTOR

50/805 INTRODUCTION

.01 A small distributor is usually defined as one with gross annual revenues of up to $10 million. There are, however, exceptions to this definition. For example, a distributor that deals in high-cost items with only a small number of unit sales may have a sales volume that exceeds $10 million.

.02 Industry competition has caused small distributors to seek better ways to control costs and manage their inventories. The ability to keep inventory management and turnover information accurate and current can be enhanced by automation. Therefore, small distributors benefit most from automating inventory, receivables, and payables systems. Other areas that automation may improve are the general ledger and payroll.

.03 Automation has a major impact on the operations of both the small distributor and its customers. It not only introduces new methods, but also affects transactions and the shipping of merchandise. This part of section one discusses the issues associated with automating the distributor's systems and defines the requirements for these systems.

50/810 INDUSTRY BACKGROUND AND AUTOMATION NEEDS

.01 The wholesale distribution industry consists of companies that purchase large quantities of merchandise directly from manufacturers and resell it in smaller quantities to retail outlets, jobbers, and others who then distribute it to the consumer or to commercial end users. Distributors generally take title to and delivery of the goods, but they may also arrange for the manufacturer to drop ship the goods directly to the customer. When the goods are sold and shipped, the title passes to the customer. Distributors may receive the goods on consignment or have special return or buy-back arrangements with the manufacturer. Many distributors also provide repair parts and service to their customers. These special arrangements are often unique to each manufacturer. Practitioners therefore need to be aware of any distinctive arrangements when automating distributors' inventory systems.

.02 The distribution process involves many functions. Although the specific procedures may differ somewhat among distributors, the following basic functions are usually present. Small distributors often have a single individual or department perform many of them.

- *General distribution management.* The overall planning, organizing, and management of the business.

- *Inventory planning.* The procurement of goods from and the administration of purchase contracts with manufacturers.

- *Receiving.* The physical receipt of goods into the warehouse of the distributor. This function generally includes checking the quantity and description of the goods against the purchase order and inspecting the goods.

- *Warehousing.* The physical storage of goods in an organized and efficient manner. Storage practices depend primarily on such factors as physical space, storage equipment, security requirements, and order-picking methods. Unique storage practices may be required for perishable goods, livestock, and controlled or hazardous substances.

- *Sales and marketing.* The development of sales programs, catalogs, and price lists and the overall management of the company's marketing efforts. The management of the direct-sales force is generally in this area. Customer service, however, is often a separate department because of its direct impact on customer satisfaction.

- *Customer service.* The telephone contact with the customer to sell and take orders for goods, and to resolve delivery, out-of-stock, and other problems. Often each customer is assigned a customer service representative.

- *Credit and collections.* The analysis of credit information and the setting of customer credit limits. This function includes constant monitoring of customer financial status, collecting past-due accounts, and revising credit limits.

- *Order pick-pack.* The process of picking, assembling, checking, and packing customer orders. At many distributors, this comes under the warehouse function.

- *Assembly and production.* The distributor may perform some assembly or production operations on the goods before shipping them to the customer.

- *Traffic (delivery).* Customer orders go through a process of scheduling, loading, and delivery. The delivery may be by common carrier, small-package delivery, mail, company vehicle, or other means. When company vehicles deliver, this function may include vehicle maintenance.

- *Data processing.* Data is processed for customer orders, inventory control, accounting, payroll, and other business information. This area may include electronic data communications whereby customers place orders with hand-held bar-code readers or remote personal computers.

- *Accounting.* The processing and analysis of company accounting information.

50/815 ISSUES AND CONCERNS

.01 A small distributor can be compared to a commodities trader. The distributor invests in inventory with the notion that it can be sold relatively fast at a reasonable margin. Thus the primary business of a distributor, regardless of type, is to turn over inventory and create cash flow.

.02 Accordingly, the major issues and concerns of a small distributor are control of inventory and management of accounts receivable and accounts payable. A slowdown in the processing of any of these three areas can have a drastic impact on a small distributor, especially in a highly competitive environment. For example, should collections of receivables slow from thirty-five to forty-five days, the distributor may be unable to meet its accounts payable obligations. This problem will then directly affect its ability to obtain credit on future inventory purchases. A successful distributor must have adequate systems in place to safeguard and monitor these three primary areas or it will soon be out of business.

.03 The purpose of automating a small distributor is therefore to put into place systems and procedures that properly monitor and control the areas of operation that are key to a successful business. Automation should strive to meet the following management objectives:

a. Provide responsive customer service, which involves adequate inventory levels, knowledge of customer buying habits, and, after the conclusion of a sale, collection of the account.

b. Control the timing of vendor payments so that terms, including credit arrangements are favorable.

c. Maintain reliable reporting capabilities so that profit margins can be readily monitored and controlled. This will also give the distributor the ability to work with manufacturers for special pricing on highly competitive products and during downturns in the market. Additionally, it will allow the distributor to monitor overhead levels to ensure that they stay within profitable boundaries. Although inventory and cash management are crucial to a distributor, mismanagement of overhead costs, as in any business, can lead to its ultimate demise.

.04 When selecting automated systems, the practitioner needs to be aware of these major objectives as well as any that may be unique to the particular distributor. The client's feedback in addressing these concerns should determine the features required in an automated system. When discussing the requirements for an automated system with management, the practitioner should be aware of additional issues and concerns associated with customer service, profit margins, and competition.

Customer Service

.05 Customer service is a major area for the practitioner to consider. Specific issues include the time required to ship orders, the acceptable level of stock outs, and the customer returns policy. By asking the client to identify the positive and negative aspects of its customer service, the practitioner can gain an understanding of the company's overall objectives.

Profit Margins

.06 A distributor earns adequate margin or gross-profit dollars by using effective buying and selling practices. When considering the adequacy of current margins, the practitioner determines how much pricing flexibility the client has in dealing with manufacturers. For example, the practitioner may ask the distributor if it has ever requested special pricing or terms from manufacturers. If the client has volume price agreements or other pricing plans in force, the practitioner determines how they work and what types of customers are involved. An example of a pricing agreement based on customer type is one in which a contractor receives a special rate on merchandise that an end-use customer typically would not.

.07 The distributor's competition and current pricing structures may also affect the distributor's pricing strategy. After discussing the method for setting prices with the client, the practitioner may wish to arrange to re-evaluate prices periodically.

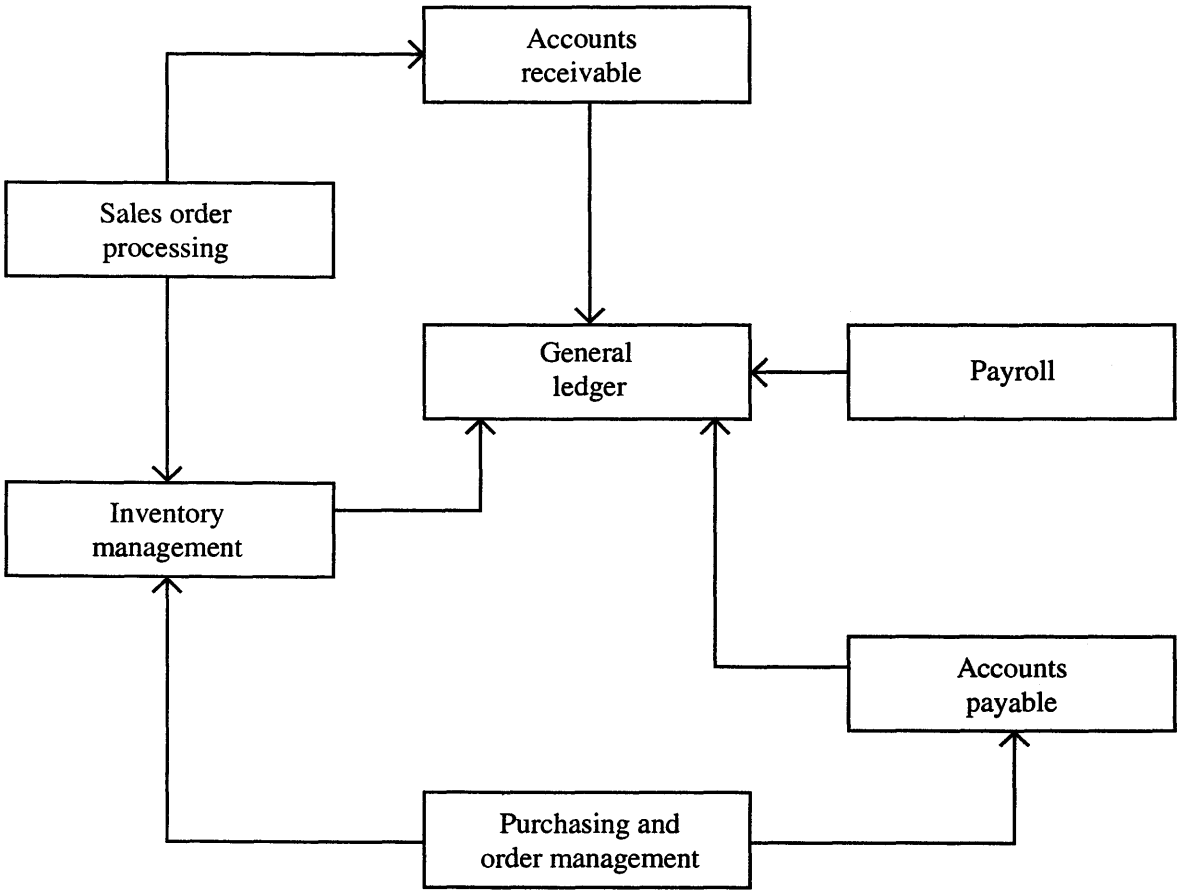
Competition

.08 The practitioner and the client need to discuss the company's competition at the national, regional, and local levels. This is an effective way to find out what the client perceives to be its own strengths and weaknesses. The practitioner can also study competitors to determine what they are doing that the client is not.

50/820 APPLICATIONS

.01 A distributor may need many applications of computer systems. The flowchart (figure 50/800) shows how the most common computer applications in the distribution industry would interface in an integrated system. The size or specific nature of the distribution company may dictate other specialized applications.

Figure 50/800
Common Distributor Computer Applications



Purchasing and Order Management

.02 The distributor can use a computerized purchasing and order management system to prepare purchase-order forms on a one-time or blanket-order basis. The system can maintain the on-order status for each item. If the distributor has more than one warehouse location, the system maintains this information for each location. If the order changes before the goods are received, the system updates purchase-order information when the goods are received. The system may track purchasing statistics and provide management reports highlighting such items as late shipments from the manufacturer, price variances, and returned goods.

Inventory Management

.03 The practitioner evaluates the client's inventory turnover, stock outs, investment levels, and policies on obsolete or slow-moving items and compares them with industry averages and practices. When considering inventory management software, the practitioner needs to be alert to the client's inventory costing method because software packages vary in valuing methods.

.04 **Inventory Control and Accounting.** The inventory control and accounting function of a computer system maintains constant control of each item the distributor stocks. This application needs to be integrated with almost all of the other computer applications to provide a central data base of stock-keeping information. The inventory application maintains information for each stock-keeping unit (SKU) by quantity and by dollar value. Various methods of inventory valuation are generally provided.

.05 The inventory control application generally maintains and tracks the following information:

- Purchase order (on order at vendor)
- Receipts into stock
- Returns to vendor
- Customer shipments
- Item descriptions for invoices
- Lot and serial numbers
- Inventory dates

- Inventory selling price
- Commission structure
- Customer returns
- Warehouse transfers
- Physical inventory adjustments
- Dollar adjustments

.06 **Inventory Management Reporting.** The inventory management application provides company management with statistics and other information about inventory effectiveness, stock turnover, return on investment, inventory movement, and specific exception conditions. Because of the vast amount of information maintained on an inventory system, all management reports should look only at single products, single product lines, or specific conditions.

.07 The inventory management reporting application can either be fully integrated with the purchasing and order management system or it can stand alone. The system may also provide inventory forecasting and recommend re-order quantities based on the distributor's strategies and current sales trends. The more advanced inventory management functions may include inventory simulation, economic order quantity (EOQ) analysis, and other sophisticated operations.

Sales Order Processing and Analysis

.08 **Order Entry and Processing.** The distributor can use the computer to record and process the customer's order. The data entry person may work from an order form or with the customer on the telephone. The system usually stores such customer information as billing address, shipping address, price levels, terms, and shipping instructions. For each new order, the clerk enters only the items being ordered (line items).

.09 The order-entry and processing application checks the inventory status for each item ordered to ensure that the stock is adequate to satisfy the customer's order. If the stock is out or low, the system back orders the quantity, so that when the goods are received they can be shipped out. At order entry, the system also provides price quotes to customers.

.10 Each distributor has special requirements for the order-entry forms generated by the system. The common forms, however, are order confirmations, picking lists, packing lists, bills of lading, price stickers, invoices, credit memos, and warehouse shelf labels.

.11 The practitioner discusses the impact of the client's delivery methods on customer satisfaction and on profits. The practitioner also examines the handling of purchase costs such as freight, which is treated as either a period cost or a product cost depending on management policy.

.12 Once the distributor ships an order, the system prepares a customer invoice. The system generally calculates and summarizes the gross margin, sales taxes, discounts, invoice totals, and shipping charges and transmits this information to the accounts receivable and the sales analysis applications.

.13 If a customer returns the goods later, the system issues a credit memo and updates the inventory status along with the accounts receivable and sales return accounts.

.14 **Sales Analysis.** The sales analysis application provides management with reports on sales volume, gross margin, and customer returns. These reports are in a variety of formats and are generally available at any time. They may report the information according to such fields as product, product line, territory, customer, salesperson, or inventory class.

.15 The sales analysis system may also include sales commission calculations and accounting. The practitioner learns how the company compensates its sales force. Additional issues include whether customer-service personnel or warehouse personnel receive incentive compensation and, if so, what incentives are used and whether they are based on sales, cash receipts, or some other measurement. Some of this information may be integrated within the other modules.

.16 The practitioner should also review the merchandising programs to determine whether the client just takes orders or needs to create a consistent program of promotions, specials, and other events to make the sale. The practitioner considers whether the client can use a computer program to monitor promotions or offer special pricing terms.

Accounts Receivable

.17 The accounts receivable application maintains a record of each customer's account. The system stores information for each customer and updates invoice and payment information daily or, more commonly, as it is received. Invoice payment is posted through the accounts receivable system, whereas invoices can be issued through either the accounts receivable system or the sales-order entry system.

.18 This application usually prepares customer statements based on the balance-forward or the open-item method of accounting. The balance-forward method shows only an outstanding balance, while the open-item method lists the specific invoices that make up the balance. Distributors generally prefer the open-item method because it gives customers a complete picture of the status of their account. Distributors using this method post customer payments to specific invoice numbers. The accounts receivable application needs

to provide on-line invoice lookup to make this job easier. The application also needs to be able to process partial payments and general payments when the customer fails to indicate the invoice number on a remittance.

.19 Credit and collection reports are generally part of the accounts receivable application. The most useful management report is the accounts receivable aging analysis, which summarizes each customer's account by the age of each outstanding invoice. The report also identifies past-due invoices and calculates totals for each aging period (over 60 days, over 90 days, and so forth). Other credit reports may show all orders on credit hold or list accounts that the credit department needs to review.

.20 The client's bad-debt history and credit policies need to be considered by the practitioner. The practitioner discusses how credit policies may change as the company grows, what types of additional credit reports may be needed, and whether any outside credit agencies may be used.

.21 Distributors that have a large number of customers or whose customers have significant account balances often subscribe to credit reporting services. Although services have historically provided this information in book form, more companies are now receiving it via a computer terminal at their own office. Distributors are also using personal computers to communicate directly with the credit information service.

.22 The accounts receivable module should also be able to track sales by salesperson for commission payments. Finally, the software may also have the ability to process one-time customers, non-accounts receivable cash receipts, multiple bank accounts, and any other items specific to the client.

.23 To assist in developing effective cash management procedures, the practitioner needs to review the client's current banking and other financing practices, as well as the formal method of cash flow planning, if any. The practitioner discusses with the client the approach to use in determining current and future cash requirements and the reports of accounts receivable, accounts payable, and inventory that might aid management in cash flow planning.

General Ledger and Financial Reporting

.24 The general ledger and financial reporting application of a computerized distribution system automates the company's accounting books and records. The general ledger application should allow for departmental or divisional reporting, depending on the size of the company, and should provide a flexible system for building the chart of accounts.

.25 The typical general ledger system application provides the balance sheet, income statement, and other financial statements, journals, and ledgers. In addition, this application needs to be able to produce custom financial statements if the client desires them. The system must be able to print financial statements at any time, instead of the client's having to wait until the end of the month for a report.

.26 The system should allow the client to keep several periods open at the same time in order to make an efficient transition from month to month. Because management inventory and order control require immediate data entry, the system needs to be able to start a new month or year without having to close the prior period.

.27 The general ledger is the center of any integrated computer system for business. Consequently, it needs to receive general ledger transactions automatically from the other applications. Many advanced systems transfer the general ledger transactions as they are generated. This is referred to as real-time posting. Other systems require distributor personnel to transfer the transactions in batches.

.28 The practitioner should determine whether the client wants to operate the general ledger. Instead, the client may prefer the practitioner to maintain this information. In that case, the practitioner needs to select an accounting system package that allows various modules to operate without the general ledger module.

Accounts Payable

.29 The accounts payable application controls payments to vendors and suppliers. The accounts payable application can prepare checks on the computer and provide cash forecasts to help the client manage cash flow more efficiently. To help maintain inventory control, the system needs to compare vendor invoices with purchase orders in terms of dollars and item quantity.

.30 The payables application should be able to monitor different credit terms from manufacturers and provide reports of available discounts and other favorable terms.

Payroll

.31 The payroll application calculates and prepares employee payroll checks and maintains earnings records for tax and other purposes. Payroll accounting for a distributor normally has few unique requirements.

Report Writer

.32 The ability to generate special or custom reports may be the single greatest benefit that the client can gain from a computer system. If the report writer has a data dictionary of all the information in the system, the client can generate custom inquiry screens and reports without having to write any programs. However, the report writer needs to be designed to prevent changes from being made to any of the accounting information in the system.

Planning

.33 Small distributors, like most enterprises, usually do little formal planning. To determine whether formal planning would benefit the company, the practitioner discusses with the client what is currently being done. The practitioner may wish to select or design a computer program that generates reports to support planning.

Advanced Applications

.34 For the small distributor, providing the customer with on-line order entry is a relatively new application. Grocery, drug, and hardware distributors, however, have provided this capability for many years. With such a system, the customer enters the order by scanning bar-coded shelf labels provided by the distributor. The distributor receives the order via telephone data transmission. This application can provide operational efficiency and other competitive benefits to the distributor. In addition, certain large customers may require the distributor to label each package being shipped with a bar code. This provides more efficient receiving and inventory control at the customer's warehouse.

50/825 INDUSTRY INFORMATION SOURCES

Standard Industrial Classification Code

.01 The Standard Industrial Classification (SIC) code maintained by the Department of Labor for establishments primarily engaged in the warehousing and storage of a general line of goods is 4225. This code is required on certain governmental filings and can be used to obtain demographic information regarding wholesaling and distributing concerns from the Department of Labor and from private sources that use SIC codes for industry classification.

Associations

.02 Each segment of the distribution industry has its own trade organizations. Many of these organizations produce booklets, white papers, and other publications on industry issues, including systems' computerization. Most large organizations have standing committees that address computer issues.

.03 The following is a list of some sources of further information. The practitioner may also wish to refer to other trade associations or to local chambers of commerce for guidance.

Material Handling Equipment Distributors Association
201 Route 45
Vernon Hills, IL 60061
(312) 680-3500

National Association of Electrical Distributors
28 Cross Street
Norwalk, CT 06851
(203) 846-6800

National Association of Wholesaler-Distributors
1725 K Street, N.W.
Washington, DC 20006
(202) 872-0885

National Beer Wholesalers' Association
5205 Leesburg Pike, Suite 1600
Falls Church, VA 22041
(703) 671-7575

National Candy Wholesalers' Association
1120 Vermont Avenue, N.W., Suite 1120
Washington, DC 20005
(202) 463-2124

National Paper Trade Association
111 Great Neck Road
Great Neck, NY 11021
(516) 829-3070

National Wholesale Druggists Association
P.O. Box 238
Alexandria, VA 22313
(703) 684-6400

National Wholesale Furniture Association
P.O. Box 2482
164 S. Main Street, Suite 404
High Point, NC 27261
(919) 884-1566

GLOSSARY

bill of lading A form indicating the merchandise being shipped, its weight, the shipper, date of shipment, and notification of pickup by the shipper.

bin location A specific location in a warehouse assigned to a specific identifier. It is part of a method used to locate inventory and control the warehouse layout.

gross profit Net sales less the cost of goods sold.

inventory turnover The cost of goods sold divided by average inventory.

lot-serial tracking A method of inventory control whereby each inventory item is assigned a specific identifier or to a specific lot.

picking list A list generated by a customer that indicates which items from inventory are to be pulled and shipped together to complete the customer's order.

product line A group of similar products for reporting and analysis purposes. The products may also be grouped according to vendor or manufacturer.

receivables turnover Net sales divided by average accounts receivable.

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50/900 SECTION TWO—THE ENGAGEMENT PROCESS

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50/900 THE ENGAGEMENT PROCESS

50/905 OBTAINING AN ENGAGEMENT

Researching the Market

.01 Once practitioners decide that assisting businesses and other organizations to automate their systems is a service they wish to offer, the next step is to research the market. The objective of this research is to determine whether a commitment of time and resources is likely to result in obtaining business in the selected industry. Practitioners can obtain names of organizations in a particular industry from the directories of trade associations and other business groups and chambers of commerce. Using these lists, they can classify the organizations according to size or sales volume. After deciding which class of organizations may be an appropriate market, practitioners may further categorize the class. For example, after selecting medium-sized property management firms as the target market, they may divide this group further into those that appear to offer the best opportunity and those to which they are already providing other services. Discussions with local bankers and other business people may help practitioners decide where to concentrate their marketing efforts. Practitioners outside major metropolitan areas may wish to select prospective clients on some other basis because the number of organizations in a single industry in their area may be limited. Failure to define the market properly can substantially hinder future success.

.02 The next step is to communicate with prospective clients. After selecting the most promising market segments, the practitioner identifies at least one company in each segment as a preliminary prospect and secures an initial interview. The interview will help the practitioner to decide about the market segment's potential. The practitioner may conclude that an opportunity exists, that additional information needs to be gathered, or that the market has few favorable prospects.

.03 The practitioner can get additional information about an industry and its accounting practices through on-line services. These services provide background information, financial data, and technical research and documentation, including market research and industry outlooks.

Identifying Available Software

.04 For each industry selected, the practitioner identifies available computer software. The objective is to learn what software exists rather than how to operate it. The practitioner builds a file of pertinent marketing brochures, user guides, and other information and reads the industry magazines to obtain a general understanding of the software's features and functionality. At trade shows and trade association meetings, the practitioner can meet software vendors and observe product demonstrations. The practitioner can also obtain information about software and hardware through data bases, such as CompuServe. These data bases provide buyer's guides with product literature for thousands of computer products, abstracts of product reviews from several hundred publications, and computer industry news.

.05 After identifying appropriate software packages, the practitioner can obtain a list of current users from the vendor. In brief phone conversations with these software users, the practitioner can learn about the positive and negative aspects of the product.

.06 The practitioner can also learn about the desired capabilities of software packages by consulting the software selection checklists in section three of this publication and the industry-specific checklists in section one. In addition, MAS Technical Consulting Practice Aid No. 4, *EDP Engagement: Software Package Evaluation and Selection* (New York: AICPA, 1984), is a valuable source of information about software.

.07 By using these resources, the practitioner will gain knowledge of the market area and the available software, and define the approach necessary to develop a marketing plan for securing the initial engagement.

50/910 CONDUCTING THE ENGAGEMENT

Engagement Understanding

.01 In order to set an appropriate engagement scope, practitioners should do sufficient research to gain an understanding of the proposed project. To do this, they survey and interview company management and key operating personnel. The interviews need to include the personnel who would operate the automated systems or supervise their users. The overall purpose of these interviews is to determine management's interest in and ability to meet the objectives of a project involving the implementation and maintenance of automated systems.

.02 During the initial interview stage, the practitioner may want to review the client's existing manuals, service bureau agreements, and current computer procedures. This brief review will help identify strengths and weaknesses in the present system and determine the client's requirements for the new computer system.

.03 During the interviews, the practitioner often learns about conditions that may require further discussion with the client before the scope of the work can be set and an engagement letter can be submitted. In some cases, the practitioner may determine that because of a poorly designed accounting system, weak internal controls, or inadequately trained or supervised accounting staff, the client company is unprepared to efficiently implement a computer system. Other conditions that may require special preparatory work include—

- Inadequate control procedures and records in inventory, purchasing, and cash management.
- A disorganized chart of accounts.
- Poorly designed internal financial statements.
- Master files without a coding scheme.

.04 If one or more of these conditions exists, the practitioner should discuss them with the client immediately. These discussions may result in a redefinition of the engagement scope. Alternatively, instead of setting the scope of an automation engagement, the practitioner may recommend an initial engagement to prepare the client's systems for automation. If the client agrees to a preparatory engagement, it should be conducted apart from the automation engagement.

Engagement Letter

.05 The engagement letter is a critical part of a consulting services engagement. The engagement letter should define the engagement's objectives, its scope, the tasks to be performed, the responsibilities of both practitioner and client, time schedules, fee estimates, and other important information. Exhibit 1 in section three provides a sample letter for an engagement to assess and plan automated systems.

Work Plan

.06 Engagement organization and executive techniques are described in detail in the CPA and consulting literature, and several AICPA consulting practice aids offer more detailed guidance on these matters.[1] Accordingly, this practice aid will not discuss all aspects of engagement planning and control. Practitioners need to recognize that a project's success and client satisfaction depend greatly on planning and control of all engagement activities.

[1] Additional guidance on engagement conduct is available in MAS Practice Administration Aid No. 1, *Developing an MAS Engagement Control Program* (New York: AICPA, 1984). Information about obtaining AICPA practice aids is provided at the end of this practice aid.

.07 As with any engagement, planning a computer-related engagement requires that the practitioner determine which tasks must be accomplished, by whom, and by when. Moreover, since client personnel usually are involved in the engagement, the practitioner needs to obtain the approval and support of client management. Because automation can create many changes in an organization, in addition to changes in job responsibilities, the practitioner must be certain that the users of the new system accept the engagement. Implementation of new software and hardware requires outstanding interpersonal skills, in addition to technical skills, from any practitioner.

.08 Continuous involvement of client personnel increases their opportunity to learn and their acceptance of the new system. In preparing the engagement work plan, the practitioner needs to assign most of the tasks to the client. The more involved personnel are in the planning and conversion, the more opportunity they have to ask questions and clarify any misunderstandings. The practitioner needs to plan the engagement so that when the project is completed, the client personnel (users) can actually take ownership of the system and accept it as their own.

.09 While preparing the engagement letter, the practitioner also develops a work plan. The work plan documents the scope of work contained in the engagement letter and is the basis of fee estimates. It also lists in detail the tasks, responsibilities, start and completion dates, and estimated chargeable hours. Each engagement activity will require budgeted hours charged by the practitioner's staff at their hourly rates. Although work performed by client personnel will not be charged to the client, the practitioner needs to budget the required time and establish completion dates for these activities. Exhibit 50-2 in section three is a sample work plan for an engagement to assess and plan automated systems.

Systems Assessment and Planning

.10 From the earliest stage of the engagement, the practitioner strives to understand the client firm's culture and attitudes toward automation. The client may have specific or general ideas about what automation should do for the company. The practitioner always keeps the firm's key objectives in mind in order to avoid the unnecessary automation of less important areas. Through observation, review of procedures and documentation, and interviews with key client personnel, the practitioner identifies the existing systems' strengths and weaknesses and defines the client's requirements for the new computer system. More specifically, the practitioner's objectives are to—

- Determine what processes are to be automated.
- Define the information and reports the client would like to have.
- Establish the frequency and method of systems operation.
- Estimate the importance of each system element and application.

.11 To help accomplish these objectives, the practitioner may wish to use checklists or surveys. Usually, client personnel complete the checklists. Section three of this practice aid contains checklists that the practitioner may wish to adapt to the engagement. Exhibit 50-3 in section three provides a checklist for assessing existing systems documentation. Exhibit 50-4 provides a needs assessment survey for documenting systems requirements. In addition, most of the industry-specific parts of section one of this practice aid contain checklists for the particular industry. After these surveys are completed, the practitioner prepares a memo of the findings. This memo is often in outline form and becomes part of the practitioner's workpapers. In addition to using the checklists, the practitioner may wish to interview some client personnel to gain further insight into their individual needs and concerns.

.12 Good planning for the client includes developing budgets for hardware, software, training, and systems installation assistance. The budget is an objective economic measurement of client goals. Furthermore, it makes the client aware of the seriousness of the automation commitment.

.13 In selecting software to meet system requirements, the practitioner considers whether the client needs to integrate all of its systems or if some systems can stand alone. The practitioner also considers whether software designed specifically for the industry is necessary or a standard package is adequate.

.14 A very important cost consideration is hardware and software maintenance, which should be included in the budget for system support. Hardware maintenance consists of a service contract similar to those for home appliances and office machines. The service contract may be with a third-party maintenance company and it can be on a pay-as-you-go basis. Typically, the service contract allows for on-site or carry-in service. The type of service contract the client wants will depend on the size and sophistication of the computer system, the client's proximity to the vendor, and the costs.

.15 The most important factors to consider in maintenance contracts are their costs and what they include and exclude. For example, the contract may provide for borrowed equipment to minimize disruption during computer malfunctions. With adequate information and the practitioner's assistance, the client can make an informed decision.

.16 In addition to discussing hardware maintenance, the practitioner needs to explain to the client the benefits of software maintenance. Software maintenance typically requires a fixed or variable annual fee for both telephone support and software updates. If vendors do not support earlier versions of their product, it is essential for the client to purchase the vendor's software maintenance program.[2]

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[2] Additional guidance on maintenance contracts and security issues is available in MAS Technical Consulting Practice Aid No. 5, *EDP Engagement: Assisting Clients in Software Contract Negotiations* (New York: AICPA, 1984) and MAS Technical Consulting Practice Aid No. 13, *Microcomputer Security* (New York: AICPA, 1990). Information about obtaining AICPA practice aids is provided at the end of this practice aid.

.17 In assessing vendor support of both hardware and software, the practitioner will find it helpful to use the checklists and questionnaires in exhibits 50-5, 50-6, and 50-7 in section three. The practitioner concludes the engagement by summarizing the findings and recommendations and discussing them with the client. The summary includes software and hardware alternatives for the client to consider. During this discussion, the practitioner may wish to broach the subject of implementation. In any event, the engagement findings should be presented in a final formal report.

Implementation

.18 If appropriate, along with the final report, the practitioner presents the client with a letter outlining an engagement to implement the recommended systems. Exhibit 50-8 in section three of this practice aid is a sample engagement letter for an implementation project. The practitioner may wish to include a work plan with the engagement letter. Exhibit 50-9 is a sample implementation work plan.

.19 The practitioner may wish to divide the implementation into phases. This will help to minimize interruption of the client's operations and to achieve milestones and measure benefits in meeting the engagement's objectives. For example, a firm may automate its application systems in phase one, install a local area network of microcomputers in phase two, and implement communications between sites in phase three.

.20 In general, the practitioner can subdivide an engagement to automate systems into four phases: *(1)* hardware and software installation, *(2)* system conversion, *(3)* procedures development, and *(4)* client training,

.21 **Hardware and Software Installation.** The hardware installation involves connecting components such as the computer, printers, disk drives, tape-backup units, uninterruptible power supplies, and modems. In directing the installation, the practitioner needs to consider such factors as accessibility, security, and environmental conditions, including the quality of electrical current, the temperature of the room, and the level of pollutants. Similarly, the software installation requires proper configuration of menu options, data files, and hardware.

.22 **System Conversion.** Converting an existing manual system to a computerized system is often difficult and time-consuming. Difficulties are also encountered when two organizations are involved in either a merger or an acquisition and the two existing computer systems must be merged. Depending on the size of the client's operation and the extent of the automation, a significant amount of data entry of all accounts and balances is required. Generally, the records are entered manually into the new system. The input of master file information such as the chart of accounts, customer files, and vendor files requires that someone verify all factual and historical information before data entry can begin. After the master file information is entered into the new system, the verification and review must be repeated. This is done by generating the reports and reconciling the output with the source documents or manual reports to confirm the integrity of the data and the

system's installation. Overtime or temporary help may be required to complete these tasks. Proper supervision and planning by both the practitioner and client management will help prevent major problems and ensure that the system will have accurate data with which to begin operations.

.23 **Procedures Development.** The practitioner reviews with the client the general operating procedures and controls required by the new system. Usual procedures include logging computer activity for scheduling work and system utilization (see exhibit 50-10 in section three). The CPA also reviews routine procedures for backing up the system and data files and maintaining the accompanying backup activity log (see exhibit 50-11 in section three). Procedures for recording system problems may also be useful and can be a good source of information to both the client and the practitioner when problems occur. Exhibit 50-12 in section three provides a "System Problem Report" with detailed instructions.

.24 **Client Training.** Training the client's staff is crucial during both the implementation and post-implementation phases. Some vendors offer training videotapes and in-house classes. Many accounting system products include demonstration data that help the client to become familiar with the system by experimenting with the software's features. Also, many CPA firms and other organizations provide computer training, either customized or in a classroom setting for several clients.

.25 Client training can make or break an engagement. Personnel may be difficult to train if they harbor negative feelings about automation in general or are uncertain about the system's effect on their jobs. Employees must recognize the role the new system will play in comparison to the existing system. Practitioners may identify potential problems during interviews. When they do, they need to take steps to allay employee fears and encourage cooperation. The comfort level achieved by personnel during training will directly affect the amount of post-implementation support the client will require.[3]

Evaluation

.26 After completing the implementation process, the practitioner reviews the project to determine how well it meets the client's objectives. The practitioner evaluates the system's current and future needs for capacity, speed, and relevant through-put. If necessary, the practitioner summarizes the system's features and shows how they support the client's growth plans.

.27 The practitioner compares the final costs with the budget, reconciles significant differences, and discusses them with client management. The practitioner also discusses the user's fears and concerns about the automated systems in order to resolve any problems.

[3] Additional information about training is available in MAS Technical Consulting Practice Aid, No. 14, *Microcomputer Training* (New York: AICPA, 1991). Information about obtaining AICPA practice aids is provided at the end of this practice aid.

.28 Once the system is converted and fully implemented, the practitioner schedules an exit conference with the client and prepares an exit memo. During the exit interview, the practitioner summarizes the engagement's activities and progress. At this time, the CPA and client may also schedule post-implementation reviews to monitor how well the new system supports the client's organization.

Post-Implementation Review

.29 Depending on the level of automation and the scope of the engagement, the first post-implementation review should occur one to three months after the exit interview. The purpose of this review is to gauge progress, assess the software and hardware capabilities, evaluate the performance of those involved in the implementation, and address any other concerns. These meetings benefit both the client and practitioner in realistically evaluating the new system.

Ongoing Support and Enhancements

.30 After automated systems have been installed, a client with unrealistic expectations may be surprised at the effort required for them to function effectively. Another client may have reservations about a newly installed computer system, even when it produces the desired results.

.31 By anticipating these concerns and offering additional support for enhancements, the practitioner can ensure long-term client satisfaction. This continued involvement may include any of the services mentioned in the ¶ 50/915.01, "Identifying Follow-On Engagement Opportunities." If the practitioner maintains an involvement with the client, the nature of and fees for this relationship will depend on the level of support that the client requires. Ongoing support can be provided on-site, by telephone, or by telecommunications with a staff-level person who may have a lower billing rate.

.32 Traditional ongoing support involves resolving issues related to the functionality of the software or possibly clarifying matters that users did not understand during training. Management's information requirements may also change over time, and the systems may have to be modified or enhanced.

.33 The practitioner must understand and be able to communicate to the client the difference between the functionality of installed software and its probable performance with supported hardware and additional enhancements that the client may desire.

.34 Enhancements often involve actual customizing of the software to perform additional functions. Enhancement projects are usually follow-on engagements and are not included in regular ongoing support arrangements. Enhancement projects are best supervised by the practitioner most familiar with the client and the industry, who is probably the staff person who reviewed the initial requirements for automation.

50/915 IDENTIFYING FOLLOW-ON ENGAGEMENT OPPORTUNITIES

.01 As stated above, even after automated systems are installed, management's information requirements may change, requiring system modifications or enhancements. In general, the need for system changes can be expected as the business environment changes. The need for changes presents an opportunity for the practitioner to provide additional services. These services may include generating custom reports, reviewing system controls and performance, defining system changes, replacing and upgrading hardware and software, negotiating with software vendors, scheduling additional installations, arranging for further training, and handling other related services. Other possible related follow-on engagements include cash flow projections, capital expenditure evaluations, budgeting, operational audits, and management review profitability analysis.

APPENDIX 50/F

STATEMENT ON STANDARDS FOR CONSULTING SERVICES

CONSULTING SERVICES: DEFINITIONS AND STANDARDS

Introduction

1. Consulting services that CPAs provide to their clients have evolved from advice on accounting-related matters to a wide range of services involving diverse technical disciplines, industry knowledge, and consulting skills. Most practitioners, including those who provide audit and tax services, also provide business and management consulting services to their clients.

2. Consulting services differ fundamentally from the CPA's function of attesting to the assertions of other parties. In an attest service, the practitioner expresses a conclusion about the reliability of a written assertion that is the responsibility of another party, the asserter. In a consulting service, the practitioner develops the findings, conclusions, and recommendations presented. The nature and scope of work is determined solely by the agreement between the practitioner and the client. Generally, the work is performed only for the use and benefit of the client.

3. Historically, CPA consulting services have been commonly referred to as management consulting services, management advisory services, business advisory services, or management services. A series of Statements on Standards for Management Advisory Services (SSMASs) previously issued by the AICPA contained guidance on certain types of consulting services provided by members. This Statement on Standards for Consulting Services (SSCS) supersedes the SSMASs and provides standards of practice for a broader range of professional services, as described in paragraph 5.

4. This SSCS and any subsequent SSCSs apply to any AICPA member holding out as a CPA while providing Consulting Services as defined herein.

Definitions

5. Terms established for the purpose of the SSCSs are as follows:

Consulting Services Practitioner. Any AICPA member holding out as a CPA while engaged in the performance of a Consulting Service for a client, or any other individual who is carrying out a consulting service for a client on behalf of any Institute member or member's firm holding out as a CPA.

Consulting Process. The analytical approach and process applied in a Consulting Service. It typically involves some combination of activities relating to determination of client objectives, fact-finding, definition of the problems or opportunities, evaluation of alternatives, formulation of proposed action, communication of results, implementation, and follow-up.

Consulting Services. Professional services that employ the practitioner's technical skills, education, observations, experiences, and knowledge of the consulting process.[1] Consulting Services may include one or more of the following:

a. Consultations, in which the practitioner's function is to provide counsel in a short time frame, based mostly, if not entirely, on existing personal knowledge about the client, the circumstances, the technical matters involved, client representations, and the mutual intent of the parties. Examples of consultations are reviewing and commenting on a client-prepared business plan and suggesting computer software for further client investigation.

b. Advisory services, in which the practitioner's function is to develop findings, conclusions, and recommendations for client consideration and decision making. Examples of advisory services are an operational review and improvement study, analysis of an accounting system, assistance with strategic planning, and definition of requirements for an information system.

c. Implementation services, in which the practitioner's function is to put an action plan into effect. Client personnel and resources may be pooled with the practitioner's to accomplish the implementation objectives. The practitioner is responsible to the client for the conduct and management of engagement activities. Examples of implementation services are providing computer system installation and support, executing steps to improve productivity, and assisting with the merger of organizations.

d. Transaction services, in which the practitioner's function is to provide services related to a specific client transaction, generally with a third party. Examples of transaction services are insolvency services, valuation services, preparation of information for obtaining financing, analysis of a potential merger or acquisition, and litigation services.

e. Staff and other support services, in which the practitioner's function is to provide appropriate staff and possibly other support to perform tasks specified by the client. The staff provided will be directed by the client as circumstances require. Examples of staff and other support services

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[1] The definition of Consulting Services excludes the following:

a. Services subject to other AICPA Technical Standards such as Statements on Auditing Standards (SASs), Statements on Standards for Attestation Engagements (SSAEs), or Statements on Standards for Accounting and Review Services (SSARSs). (These excluded services may be performed in conjunction with Consulting Services, but only the Consulting Services are subject to the SSCS.)

b. Engagements specifically to perform tax return preparation, tax planning/advice, tax representation, personal financial planning or bookkeeping services; or situations involving the preparation of written reports or the provision of oral advice on the application of accounting principles to specified transactions or events, either completed or proposed, and the reporting thereof.

c. Recommendations and comments prepared during the same engagement as a direct result of observations made while performing the excluded services.

are data processing facilities management, computer programming, bankruptcy trusteeship, and controllership activities.

f. Product services, in which the practitioner's function is to provide the client with a product and associated professional services in support of the installation, use, or maintenance of the product. Examples of product services are the sale and delivery of packaged training programs, the sale and implementation of computer software, and the sale and installation of systems development methodologies.

Standards for Consulting Services

6. The general standards of the profession are contained in rule 201 of the AICPA Code of Professional Conduct (AICPA, *Professional Standards*, vol. 2, ET sec. 201.01) and apply to all services performed by members. They are as follows:

Professional competence. Undertake only those professional services that the member or the member's firm can reasonably expect to be completed with professional competence.

Due professional care. Exercise due professional care in the performance of professional services.

Planning and supervision. Adequately plan and supervise the performance of professional services.

Sufficient relevant data. Obtain sufficient relevant data to afford a reasonable basis for conclusions or recommendations in relation to any professional services performed.

7. The following additional general standards for all Consulting Services are promulgated to address the distinctive nature of Consulting Services in which the understanding with the client may establish valid limitations on the practitioner's performance of services. These Standards are established under rule 202 of the AICPA Code of Professional Conduct (AICPA, *Professional Standards*, vol. 2, ET sec. 202.01).

Client interest. Serve the client interest by seeking to accomplish the objectives established by the understanding with the client while maintaining integrity and objectivity.[2]

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[2] Article III of the Code of Professional Conduct describes *integrity* as follows:

> "Integrity requires a member to be, among other things, honest and candid within the constraints of client confidentiality. Service and the public trust should not be subordinated to personal gain and advantage. Integrity can accommodate the inadvertent error and the honest difference of opinion; it cannot accommodate deceit or subordination of principle."

Article IV of the Code of Professional Conduct differentiates between *objectivity* and *independence* as follows:

> "Objectivity is a state of mind, a quality that lends value to a member's services. It is a distinguishing feature of the profession. The principle of objectivity imposes the obligation to be impartial, intellectually honest, and free of conflicts of interest. Independence precludes relationships that may appear to impair a member's objectivity in rendering attestation services."

Understanding with client. Establish with the client a written or oral understanding about the responsibilities of the parties and the nature, scope, and limitations of services to be performed, and modify the understanding if circumstances require a significant change during the engagement.

Communication with client. Inform the client of (*a*) conflicts of interest that may occur pursuant to interpretations of rule 102 of the Code of Professional Conduct,[3] (*b*) significant reservations concerning the scope or benefits of the engagement, and (*c*) significant engagement findings or events.

8. Professional judgment must be used in applying Statements on Standards for Consulting Services in a specific instance since the oral or written understanding with the client may establish constraints within which services are to be provided. For example, the understanding with the client may limit the practitioner's effort with regard to gathering relevant data. The practitioner is not required to decline or withdraw from a consulting engagement when the agreed-upon scope of services includes such limitations.

Consulting Services for Attest Clients

9. The performance of Consulting Services for an attest client does not, in and of itself, impair independence.[4] However, members and their firms performing attest services for a client should comply with applicable independence standards, rules and regulations issued by the AICPA, the state boards of accountancy, state CPA societies, and other regulatory agencies.

Effective Date

10. This Statement is effective for engagements accepted on or after January 1, 1992. Early application of the provisions of this Statement is permissible.

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[3] Rule 102-2 on Conflicts of Interest states, in part, the following:

> "A conflict of interest may occur if a member performs a professional service for a client or employer and the member or his or her firm has a significant relationship with another person, entity, product, or service that could be viewed as impairing the member's objectivity. If this significant relationship is disclosed to and consent is obtained from such client, employer, or other appropriate parties, the rule shall not operate to prohibit the performance of the professional service . . . ."

[4] AICPA independence standards relate only to the performance of attestation services; objectivity standards apply to all services. See footnote 2.

APPENDIX 50/G

CHECKLIST FOR CONDUCTING THE ENGAGEMENT

		Yes	*No*
Engagement Understanding			
1.	Interview management and key staff.	___	___
2.	Determine management's objectives.	___	___
3.	Discuss provision of resources for implementation.	___	___
4.	Schedule interviews.	___	___
Engagement Letter			
1.	Draft letter.	___	___
2.	Review letter with client.	___	___
3.	Submit letter to client for sign-off.	___	___
Work Plan			
1.	Draft work plan.	___	___
2.	Review work plan with client.	___	___
System Assessment and Planning			
1.	Determine what processes are to be automated.	___	___
2.	Define the information and reports the client may need.	___	___
3.	Establish the frequency and method of systems operation.	___	___
4.	Estimate the importance of each system element and application.	___	___
5.	Prepare a checklist for analysis.	___	___
6.	Prepare cost budgets for client.	___	___
7.	Decide upon additional maintenance agreements.	___	___
8.	Decide upon additional vendor support.	___	___
Implementation			
1.	Prepare engagement letter.	___	___
2.	Deliver letter to client for sign-off.	___	___
3.	Prepare implementation work plan.	___	___
4.	Prepare hardware and software installation.	___	___
5.	Prepare for system conversion.	___	___
6.	Prepare for client training.	___	___
7.	Prepare for procedures documentation.	___	___

		Yes	*No*
Evaluation			
1.	Review project.	___	___
2.	Review budget.	___	___
3.	Review user's capabilities.	___	___
4.	Conduct exit interview.	___	___
5.	Conduct post-implementation review.	___	___
Ongoing Support and Enhancements			
1.	Determine ongoing support requirements.	___	___
2.	Determine enhancement requirements.	___	___
3.	Provide for follow-on engagements.	___	___

50/1000 SECTION THREE—ILLUSTRATIVE LETTERS, FORMS, AND CHECKLISTS FOR AN ENGAGEMENT TO AUTOMATE A SMALL BUSINESS

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Exhibit 50-1

Sample Engagement Letter—Evaluation and Selection

CPA & Company
100 South Street
Anytown, USA 00000

July 15, 19XX

Mr. John Smith
XYZ Corporation
200 Main Street
Anytown, USA 00000

Dear Mr. Smith:

I appreciated the opportunity to meet with you to discuss automating your firm's information systems. This letter outlines our understanding of the assistance we will provide you in helping your organization to meet its automation needs.

Engagement Objective

The objective of our engagement is to identify *(1)* which existing systems are appropriate for automation and *(2)* which specific software and hardware will satisfy your requirements.

Engagement Scope

CPA & Company will analyze your firm's existing systems and procedures and review available software and hardware. The engagement will last approximately ten days, beginning on August 3, 19XX, and ending on August 17, 19XX.

We will perform all work in accordance with the Statement on Standards for Consulting Services set forth by the American Institute of Certified Public Accountants.

Engagement Approach

To accomplish the engagement objective, we propose to use the following step-by-step approach:

1. Define your requirements for automated systems, identifying appropriate changes and enhancements. To do this, we will evaluate your existing systems and interview selected personnel. This fact-finding will—

   - Determine what data the systems will contain.
   - Define the reports you wish to have.
   - Establish the usage of each system (how often, by how many users, etc.)

2. Establish criteria for selecting software packages. Using these criteria, we will examine commercial software packages, review relevant literature, and evaluate vendor documentation.

3. Identify and evaluate compatible hardware and software and appropriate vendors for each.

4. Analyze the costs and benefits of automating each system. These analyses will help you to decide which systems to automate.

Client Participation

Your organization will be expected to—

1. Provide the necessary records and documents.

2. Make your staff available for interviews and meetings and to answer questionnaires.

3. Cooperate with our staff in developing solutions.

Engagement Staffing and Scheduling

To ensure the engagement's success, your firm's senior management will need to be involved in the project, along with staff members who use the systems. At an initial meeting of our project team and your personnel, both groups will assign areas of responsibility.

I will direct the consulting engagement. Charles Barnes, who has performed similar EDP evaluations during the past ten years, will supervise the fieldwork.

Project Completion

We will conclude the engagement by reporting to you our analysis of your firm's automation needs and our software and hardware recommendations.

If, during the engagement, either party becomes aware of circumstances that would preclude its successful conclusion, either may terminate the engagement by notifying the other in writing.

When we deliver our final report, we can discuss our respective roles in implementing the automated system. We will submit our proposal to provide additional services, if desired, at that time.

Fees, Billing Arrangements, and Payment

We base our fees for this engagement on the time spent at our standard hourly rates. We estimate the cost of the project at $X,XXX plus out-of-pocket costs, such as transportation and materials. A retainer fee of $XXX is due upon your acceptance. The remaining balance will be due in 15 days. We will bill you for the balance and out-of-pocket expenses on completion of the engagement.

Engagement Acceptance

Please acknowledge acceptance by signing the copy of this letter and returning it to us with a check for $XXX. Thank you for retaining us. We hope this will be the beginning of a long and mutually beneficial relationship.

Sincerely,

CPA & Company

_____
Partner

Approved by_____
President, XYZ Corporation

_____
Date

Exhibit 50-2

Sample Work Plan—Evaluation and Selection

Client_____

Activity	*Estimated Hours*	*Actual Hours*	*Performed By**	*Target Start Date*	*Start Date*	*Completion Date*
Evaluate existing systems						
Document procedures						
Determine transaction volumes						
Define personnel functions						
Complete needs assessment and review findings with client						
Evaluate software						
Establish criteria for selection						
Evaluate software vendors						
Evaluate documentation						
Review software demonstration						
Select vendor(s)						
Obtain appropriate software						

*Key: C = Client; P = Practitioner; VS = Vendor-software; VH = Vendor-hardware.

Activity	*Estimated Hours*	*Actual Hours*	*Performed By**	*Target Start Date*	*Start Date*	*Completion Date*
Evaluate hardware						
Determine characteristics	_____	_____	_____	_____	_____	_____
Evaluate hardware vendors	_____	_____	_____	_____	_____	_____
Evaluate performance	_____	_____	_____	_____	_____	_____
Select vendor(s)/ manufacturer(s)	_____	_____	_____	_____	_____	_____
Prepare summary and identify alternatives	_____	_____	_____	_____	_____	_____
Present report to client	_____	_____	_____	_____	_____	_____

*Key: C = Client; P = Practitioner; VS = Vendor-software; VH = Vendor-hardware.

Exhibit 50-3

Existing System Documentation Assessment Form

Date_____ Preparer_____

General Business Information

Company name_____

Address_____

Legal entity of business_____ Fiscal year end_____

Telephone number (____) _____ - _____ Primary contact_____

Principal officers _____ _____

_____ _____ _____

_____ _____ _____

Type of business_____

Quantity	*Current*	*Projected in 2 Years*	*Projected in 5 Years*
Locations	_____	_____	_____
General ledger accounts	_____	_____	_____
Employees	_____	_____	_____
Customers	_____	_____	_____
Vendors	_____	_____	_____
Inventory items	_____	_____	_____
Jobs in progress	_____	_____	_____
Warehouses	_____	_____	_____
Distribution systems	_____	_____	_____

Comments_____

_____

_____

Current System Information

Location of system_____

Workstation operating system_____

Type of monitors_____

Type of system_____

Type of network_____

Type of printers_____

Network roles

Network operating system_____

Primary system operator_____ Backup operator_____

Executive participant_____

Software in use

_____ _____ _____
_____ _____ _____
_____ _____ _____

Persons responsible for maintaining and controlling updates and new releases of software

_____ _____ _____
_____ _____ _____
_____ _____ _____

Software under consideration_____
_____
_____

Notes_____
_____
_____

General Ledger

	Financial Statements	*Tax Return*
Type of income reporting		
Cash	_____	_____
Accrual	_____	_____
Percentage of completion	_____	_____
Completed contract	_____	_____

Please write a brief description of the following:

General ledger _____

_____

_____

Journals _____

_____

_____

Subsidiary ledgers _____

_____

_____

Chart of accounts

Number of accounts _____

Numbering system _____

Method of account groupings _____

Sub-accounts _____ _____
_____ _____
_____ _____

Divisions _____ _____
_____ _____
_____ _____

Departments _____ _____
_____ _____
_____ _____

Journal entries

Recurring entries _____ _____
_____ _____

Reversing entries _____ _____
_____ _____

Prior-period entries _____ _____
_____ _____

Cash and Petty Cash

Number and type of bank accounts_____

Individual responsible for bank reconciliations _____

Date of last reconciliation_____

Account for undeposited checks _____

Interfund cash transactions_____

Petty cash account_____

Petty cash fund balance _____

Average monthly number of petty cash fund transactions_____

Statement format

Departmental _____

Cost center _____

Comparison to budget _____

Comparison to prior year _____

Consolidations _____

Percentages _____

Level of detail _____

Other statement comments _____

_____

_____

Other management reports used _____ _____

_____ _____

_____ _____

Prior year's volume

Revenues $ _____

Expenses $ _____

Income (loss) $ _____

Accounts Receivable

Number of customers_____

User-defined customer types_____

Average number of invoices per month_____

High/low invoices per month_____

Average number of statements per month_____

Average amount of revenue per month_____

Average number of deposits per month_____

Average entries per deposit_____

Frequency of bank deposits_____

Average balance of accounts receivable_____

Average age of an account receivable (in days)_____

Average number of invoices per statement_____

Credit terms _____

_____

_____

Management reports prepared

Revenue analysis _____ _____

_____ _____ _____

_____ _____ _____

Aging periods_____days_____days_____days_____days

Billing/invoices cycles _____ _____

_____ _____ _____

_____ _____ _____

Sales tax information

Multiple states_____

Multiple local_____

Multiple rates_____

Present procedures_____

_____

Accounts receivable statements

Balance-forward method_____ Open-item method_____

Finance charges_____ Compound finance charges_____

Current price levels_____

Current credits, returns, allowances procedures_____

_____

Current collection procedures_____

_____

Recurring invoices_____

Current revenue analysis

By individual_____ By product code_____

By location_____ Other_____

Future revenue analysis needs_____

_____

Sales commissions procedures_____

_____

Customer list information_____

Credit limits_____

Lines of credit_____

Current invoice data_____

_____

Other accounts receivable information_____

_____

Order Entry

Procedures for inventory updated/accessed by order entry_____

_____

_____

_____

Current order procedures (individual entering information and methods of documentation, filling, and verification of availability, pricing, terms)

_____

_____

_____

Point of sale_____

Back-order procedures_____

_____

_____

Current shipping procedures_____

_____

_____

Forms in use_____

_____

Inventory

Number of items in inventory _____

Method of valuation _____

Pricing levels for each item _____

Inventory ratios used _____

Automatic price recalculations

Based on list _____

Based on cost _____

Other basis _____

Inventory coding system

Field sizes _____

Number of product groups _____

Lot numbers _____

Need for multiple lot numbers _____

Reorder information

Prior-period usage _____

Comparison of actual to forecasted usage _____

Turnover analysis _____

Months supply on hand _____

Minimum order quantities _____

Economic order quantities _____

User reports now prepared _____

Current method of charging inventory to jobs _____

Current method of restocking inventory _____

Frequency of inventory physical counts _____

Alternative products _____

Alternative vendors/sources _____

Comments _____

_____

Accounts Payable

Number of vendors_____

Average number of checks per month_____ Partial payments_____

Number of manual checks issued_____ Average age of accounts payable_____

Voucher system in use_____

Recurring payments_____

Preparation of account statements_____

Method of determining which bills to pay_____

Policy on liability recognition_____

Responsible person_____ Number of accounts payable accounts used_____

Discounts taken_____ Frequency of discounts taken_____

Average volume of discounts per month_____ Payable terms/codes_____

Data sensitivity (processing, recall, reporting, etc.)_____

_____

Invoice selection by

Due date_____ Vendor_____
Terms code_____ Entry date_____
Range of offset account_____ Check register/book_____
Aging periods_____
Aging reports_____

Other accounts payable information_____

_____

_____

Purchase Order Processing

Number of purchasing agents_____

Responsible employee_____

Average number of POs per month_____

Reports used in purchase planning

Expected delivery_____

Back orders_____

Master order_____

Standard order_____

Inventory stock-out_____

Receiving procedures (matching receipts to PO)_____

_____

Back-order follow-up procedures_____

_____

Purchase order variance guidelines_____

_____

Drop ship information_____

Information forwarded to accounts payable, inventory, and receiving_____

_____

Comments_____

_____

_____

Payroll

Number of employees_____ Average payroll per month $_____

Payroll period

- Daily _____
- Weekly _____
- Biweekly _____
- Semimonthly _____
- Monthly _____
- Quarterly _____

Pay type

- Salary _____
- Hourly _____
- Commission _____

Special payroll with or without taxes?_____

Certified payroll required?_____

Employee numbering system_____

States involved in payroll_____

Withholdings subject to taxes

- Medical insurance _____
- Life insurance _____
- Dues _____
- Continuing education _____

Withholdings not subject to taxes

- Travel advances _____
- Travel expenses _____
- Cafeteria plans _____

Print checks on system

- All employees _____
- By department _____
- By location _____

Security

- Person who does payroll now? _____
- Method of securing records? _____
- Method of distributing checks? _____

Management reporting

- Employee lists _____
- Department/location wages and hours _____
- Month/quarter end reports _____
- Transaction history _____
- Certified payroll report _____

Other payroll information_____

_____

_____

Job Cost

Number of active jobs_____

Number of active work codes_____

Number of job cost vendors_____

Retainage_____

Cost types_____

Actual quantities_____

Average volume of cash receipts per month_____

Average volume of job purchases per month_____

Average volume of inventory transfers between job locations or projects per month_____

Average volume of labor cost per month_____

Percent method of job completion_____

Completed cost_____

Current job cost procedures (individual entering data, methods of documentation, verification of data, etc.)_____

_____

Current job status reporting procedures_____

_____

_____

Current method of job numbering_____

_____

_____

Comments_____

_____

Exhibit 50-4

Needs Assessment Survey—Checklist of General and Global Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Password protection	_____	_____	_____	_____
Error recovery capabilities	_____	_____	_____	_____
User on-line help available	_____	_____	_____	_____
Ability to import data to and export data from other systems	_____	_____	_____	_____
Ability to operate in a network	_____	_____	_____	_____
Available vendor support				
On-site	_____	_____	_____	_____
Custom programming	_____	_____	_____	_____
Training	_____	_____	_____	_____
Bulletin boards/ remote support	_____	_____	_____	_____
Ability to define and build special reports (custom report writer)	_____	_____	_____	_____
Ability to print report to the screen or defer for later printing	_____	_____	_____	_____

Exhibit 50-4.1

Checklist of General Ledger Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Data Elements				
Number of months	_____	_____	_____	_____
Multiple companies	_____	_____	_____	_____
Divisions	_____	_____	_____	_____
Profit center	_____	_____	_____	_____
Segment financial reporting	_____	_____	_____	_____
Year-to-date balances	_____	_____	_____	_____
Actual versus budget	_____	_____	_____	_____
Budget Data				
Monthly	_____	_____	_____	_____
Current year	_____	_____	_____	_____
Future years	_____	_____	_____	_____
Chart of Accounts				
User-defined	_____	_____	_____	_____
Code length	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Account History				
Month	_____	_____	_____	_____
Year-to-date	_____	_____	_____	_____
Prior year	_____	_____	_____	_____
Printer and CRT	_____	_____	_____	_____
Sub-ledgers	_____	_____	_____	_____
Nondollar accounts	_____	_____	_____	_____
Reports				
Financial statements				
User-defined	_____	_____	_____	_____
Consolidated	_____	_____	_____	_____
Income statement	_____	_____	_____	_____
Cash basis	_____	_____	_____	_____
Accrual basis	_____	_____	_____	_____
Tax basis	_____	_____	_____	_____
Balance sheet	_____	_____	_____	_____
Cash flow	_____	_____	_____	_____
Multiple per company	_____	_____	_____	_____
General ledger				
Master file list	_____	_____	_____	_____
Year-to-date audit list	_____	_____	_____	_____
Monthly audit list	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Trial balance				
Monthly	_____	_____	_____	_____
Year-to-date	_____	_____	_____	_____
Both	_____	_____	_____	_____
General journal	_____	_____	_____	_____
Transaction journals				
User-defined	_____	_____	_____	_____
Open inquiry (posted vs. not-posted batches)	_____	_____	_____	_____
Monthly	_____	_____	_____	_____
Year-to-date	_____	_____	_____	_____
History	_____	_____	_____	_____
Other G/L reports (attach samples)				
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
Processing				
On-line data entry	_____	_____	_____	_____
Entry batch edit list	_____	_____	_____	_____
Ability to reopen				
Closed year	_____	_____	_____	_____
Closed month	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Look-up screens between integrated modules				
Automatic reversing entries				
Recurring standard entries				
Intercompany entries				
Posting Restrictions				
Balanced batches only				
Established G/L accounts				
Prior/current-period balances				
Special				
Graphics				
Data file format				
Data manager interface				
Download data to data base or spreadsheet				
Other				

Exhibit 50-4.2

Checklist of Accounts Receivable Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Customer Master File Information				
Short name	_____	_____	_____	_____
Contact	_____	_____	_____	_____
Credit limit	_____	_____	_____	_____
Terms	_____	_____	_____	_____
Sales				
Year-to-date	_____	_____	_____	_____
Month-to-date	_____	_____	_____	_____
Gross profit by customer	_____	_____	_____	_____
Sales tax				
Codes	_____	_____	_____	_____
Exemption status	_____	_____	_____	_____
Cash accounting option	_____	_____	_____	_____
Repetitive billing	_____	_____	_____	_____
Selective billing	_____	_____	_____	_____
Cycle billing	_____	_____	_____	_____
Payments applied to specific invoices	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Commission calculation based on				
Net invoice				
Gross profit				
Commission paid when invoice paid				
Central pay office				
Reports				
Aged trial balance				
Summary				
Detail				
Customer statements				
Dunning message on statements				
Aging on statements				
Finance charge journal				
Sales history by customer				
Sales tax report by state				
Sales management reports				
Collection report				
On-line order entry				
Automatic account number assignment				
Inactive accounts flagging and purging				
Mailing list				
Labels				

Exhibit 50-4.3

Checklist of Order Entry Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Orders	_____	_____	_____	_____
Back orders	_____	_____	_____	_____
Adjustments	_____	_____	_____	_____
Exchanges	_____	_____	_____	_____
Corrections	_____	_____	_____	_____
Credit-card purchases	_____	_____	_____	_____
Hold orders	_____	_____	_____	_____
Refunds	_____	_____	_____	_____

Exhibit 50-4.4

Checklist of Inventory Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Inventory Master File Information				
Item code and description	____	____	____	_____
Product class	____	____	____	_____
Supplying vendors	____	____	____	_____
Average cost	____	____	____	_____
YTD sales and quantities	____	____	____	_____
Unit of measure	____	____	____	_____
Inventory Valuation Methods				
FIFO	____	____	____	_____
LIFO	____	____	____	_____
Average cost	____	____	____	_____
Other	____	____	____	_____
Multiple warehouses or locations	____	____	____	_____
Item number change	____	____	____	_____
New inventory items added on the fly	____	____	____	_____
Inventory adjustment log	____	____	____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Reports				
Detailed transactions register by item	_____	_____	_____	_____
Stock status	_____	_____	_____	_____
Valuation	_____	_____	_____	_____
Physical inventory worksheet	_____	_____	_____	_____
Inventory turnover report	_____	_____	_____	_____
Inventory price list	_____	_____	_____	_____
Bin labels	_____	_____	_____	_____
Inventory items frozen for physical count	_____	_____	_____	_____

Exhibit 50-4.5

Checklist of Accounts Payable Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Data elements				
Vendor code				
Numeric	_____	_____	_____	_____
Alpha	_____	_____	_____	_____
Alphanumeric	_____	_____	_____	_____
Vendor name	_____	_____	_____	_____
Address, 3 lines	_____	_____	_____	_____
Zip code + 4 digits	_____	_____	_____	_____
Taxpayer ID number	_____	_____	_____	_____
Phone number	_____	_____	_____	_____
Terms	_____	_____	_____	_____
Discount period	_____	_____	_____	_____
PO reference number	_____	_____	_____	_____
Property code	_____	_____	_____	_____
Job/work order reference	_____	_____	_____	_____
Invoice number	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Dates				
Invoice dates				
Due date				
Discount date				
Receipt date				
Purchases MTD				
Purchases YTD				
Last purchase date				
Processing				
On-line data entry				
Multiple companies				
Hold invoices				
Duplicate invoice checking				
One-time vendor capability				
On-line vendor setup				
Payment processing				
Multiple bank accounts				
Single company banking				
Multiple distributions				
Manual checks				
On-account payments				
Recurring payment processing				

Features	*Required*	*Desired*	*No Need*	*Notes*
Options				
Invoice				
Due date				
Vendor				
Combination				
Detailed check stubs				
Supplemental stubs				
Integration with payroll for payroll deductions				
Automatic intercompany posting				
Automatic integration with general ledger				
Check reversal				
Reports				
Cash requirements				
Aging trial balance by				
Vendor				
Due date				
Invoice				
Company				
Batch audit trial				
Purchases journal				
Disbursements journal				

Features	*Required*	*Desired*	*No Need*	*Notes*
On-line inquiry	_____	_____	_____	_____
1099/1096 report	_____	_____	_____	_____
Vendor analysis	_____	_____	_____	_____
Vendor master file list	_____	_____	_____	_____
Mailing labels	_____	_____	_____	_____
Special Features				
Check reconciliation	_____	_____	_____	_____
Manual checks	_____	_____	_____	_____
System checks	_____	_____	_____	_____
Both	_____	_____	_____	_____

Exhibit 50-4.6

Checklist of Purchase Order Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Various Purchase Orders Processing				
Standard	_____	_____	_____	_____
Drop shipments	_____	_____	_____	_____
Master orders	_____	_____	_____	_____
Repeating orders	_____	_____	_____	_____
Material requisitions and returns	_____	_____	_____	_____
New orders	_____	_____	_____	_____
Confirming orders	_____	_____	_____	_____
Charge orders	_____	_____	_____	_____
Revised orders	_____	_____	_____	_____
Cancelled orders	_____	_____	_____	_____
Received quantity and quantity on back-order tracking	_____	_____	_____	_____
Automatic update of inventory and vendor files	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Reports				
Printed POs by type	____	____	____	____
Back-order fill	____	____	____	____
G/L posting recap	____	____	____	____
Receipt history report by vendor and product number	____	____	____	____
Daily receipts register	____	____	____	____
12-month purchasing plan	____	____	____	____
New vendors added on the fly	____	____	____	____
Definition of various units of measure and conversion factors	____	____	____	____
Non-invoice items on purchase order	____	____	____	____
Purchase Order Data				
Description	____	____	____	____
Quantity	____	____	____	____
Unit of measure	____	____	____	____
Order price	____	____	____	____
Back-order quantity	____	____	____	____
G/L account number	____	____	____	____
Equipment number	____	____	____	____
Vendor subcontract data	____	____	____	____
Dollar limits for which a purchase order can be issued	____	____	____	____

Exhibit 50-4.7

Checklist of Payroll Features

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Processing Cycles				
Weekly	_____	_____	_____	_____
Biweekly	_____	_____	_____	_____
Monthly	_____	_____	_____	_____
Semimonthly	_____	_____	_____	_____
Commissions	_____	_____	_____	_____
Automatic calculation of fringe benefits	_____	_____	_____	_____
Automatic calculation of taxes	_____	_____	_____	_____
Automatic accrual of vacation hours	_____	_____	_____	_____
Automatic accrual of sick hours	_____	_____	_____	_____
Pay Types				
Regular	_____	_____	_____	_____
Overtime	_____	_____	_____	_____
Double time	_____	_____	_____	_____
Triple time	_____	_____	_____	_____
Sick and vacation pay	_____	_____	_____	_____
Hazardous pay	_____	_____	_____	_____

Features	*Required*	*Desired*	*No Need*	*Notes*
Federal, state, and local tax tables that can be user modified	_____	_____	_____	_____
Reports				
941 worksheet	_____	_____	_____	_____
State and Federal unemployment	_____	_____	_____	_____
Workers' compensation	_____	_____	_____	_____
401-K deductions	_____	_____	_____	_____
W-2s	_____	_____	_____	_____

Exhibit 50-5

Software Vendor Questionnaire

Company Name_____ Prepared by_____Date_____

Discussed with_____ Reviewed by_____

Vendor name_____

Vendor address_____

_____

_____

Telephone (____)_____-_____Local contact name_____

Profile (please include copies of financial statements for prior two years as part of proposal)

Number of years in business_____

Sales

Last year_____ Year before last_____

Number of personnel

Technical_____

Support_____

Number of software customers_____

Customers with similar operating software (company name, contact person, phone number)

1._____

2._____

3._____

4._____

Service Information

Personnel who will serve client:

Location	*Experience with proposed packages*
_____	_____
_____	_____
_____	_____

Are upgrades, including documentation, provided as part of the license agreement?

Yes_____ No_____

Software Summary

Operating system_____

Languages available_____

Report writer available_____

Maximum file size (MB)_____

Software Installation

Warranty period_____

Phone support_____

Toll-free lines_____

Remote-control support_____

System acceptability procedures_____

_____

_____

Quality assurance procedures_____

_____

_____

Exhibit 50-6

Hardware Vendor Evaluation Checklist

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Vendor_____ Date_____

Criteria	*Excellent*	*Good*	*Fair*	*Poor*	*Notes*
Experience					
Knowledge of industry	_____	_____	_____	_____	_____
Knowledge of local area networks	_____	_____	_____	_____	_____
Number of installations	_____	_____	_____	_____	_____
Financial stability	_____	_____	_____	_____	_____
Business maturity	_____	_____	_____	_____	_____
Accounting background	_____	_____	_____	_____	_____
Software performance	_____	_____	_____	_____	_____
New product development	_____	_____	_____	_____	_____
Support					
Local representation	_____	_____	_____	_____	_____
References	_____	_____	_____	_____	_____
Installation support	_____	_____	_____	_____	_____
Training support	_____	_____	_____	_____	_____
Service contract	_____	_____	_____	_____	_____

Criteria	*Excellent*	*Good*	*Fair*	*Poor*	*Notes*
Modifications availability	_____	_____	_____	_____	_____
Documentation	_____	_____	_____	_____	_____
Loaner policy	_____	_____	_____	_____	_____

Exhibit 50-7

Checklist for Software Documentation

Company Name_____ Prepared by_____ Date_____

Discussed with_____ Reviewed by_____

Features	*Yes*	*No*	*Comments*
Instruction Manual			
Layout			
Material is printed, not typewritten	____	____	_____
Sections are organized in order of processing steps	____	____	_____
Screen images are printed in the manual as they will appear on the computer screen	____	____	_____
Content			
Installation instructions are clear and understandable	____	____	_____
Setup instructions include forms for establishing the initial data input	____	____	_____
The table of contents contains chapter titles and lists the topics	____	____	_____
The index is in sufficient detail and includes cross-referencing	____	____	_____
An error message section fully describes errors and possible solutions	____	____	_____
A technical section explains the file structure and the file access table (program vs. data files)	____	____	_____

Features	*Yes*	*No*	*Comments*
Audit trails are clear and defined	____	____	_____
Style			
The writing is clear and concise	____	____	_____
Tutorial programs with on-screen descriptions of input field content are available	____	____	_____
Other Documentation			
Support reference			
The software package includes a customer registration card	____	____	_____
The vendor's support policy clearly indicates length of time for free support and charges for ongoing troubleshooting	____	____	_____
There is description of the vendor's update policy	____	____	_____
Newsletters are periodically sent to registered owners	____	____	_____
Special			
Passwords protect and date access to applications and data files	____	____	_____
Backup and restore commands are prompted by the applications programs	____	____	_____
Multi-user capability is available either through local area network or multiuser user	____	____	_____
Source codes are available from the vendor or are in escrow if the vendor fails	____	____	_____

Exhibit 50-8

Sample Engagement Letter—Implementation

CPA & Company
100 South Street
Anytown, USA 00000

August 31, 19XX

Mr. John Smith
XYZ Corporation
200 Main Street
Anytown, USA 00000

Dear Mr. Smith:

This letter outlines our understanding of the services that we will provide in implementing your new information system.

Engagement Scope

The scope of our work during this engagement includes the following activities:

1. Assisting in planning the systems conversion
2. Assisting your staff in installing the software
3. Providing guidance on establishing controls
4. Helping your staff verify that the systems, once installed, are ready for use
5. Reviewing the performance of the systems once they are in operation
6. Evaluating the need for additional training, enhancement, or corrective measures

You and your staff will ultimately be responsible for the successful implementation of the systems. We will serve in an advisory role until you and your staff acquire sufficient experience to manage the computer systems.

Engagement Approach

We will do the following:

1. Meet with your staff to develop a plan for the system changeover
2. Identify who will be responsible for each activity in the plan
3. Assist your staff in determining what supplies and furniture are required
4. Assist your staff in designing and documenting the numbering systems required for each application
5. Help your staff to develop backup procedures and password controls
6. Define the daily logs, problem reports, and other controls required
7. Monitor the installation of each application to ensure the accuracy of data
8. Assist your staff in creating master files
9. Validate ending balances as required to verify data accuracy
10. Supervise sufficient tests to ensure that the system is ready for daily operation
11. Monitor daily operation for sixty days to determine whether any additional training, problem resolution, or enhancement is required
12. Evaluate the actual results produced by the system compared with your planned objectives
13. Report our findings and recommendations for further action

Fees

We estimate that our fees for this engagement will be $X,XXX. We believe that this fee indicates accurately the scope of the work. We have not, however, included any allowance for factors beyond our control, such as changes in your requirements, variations between estimated and actual processing volumes, time for consultation and assistance with error corrections, and the capability of your staff. Accordingly, this fee estimate does not in any way constitute a fixed-fee quote. We will bill you monthly for the time our staff actually spend on this assignment at CPA & Company's standard hourly rates, plus any out-of-pocket charges incurred on your behalf.

Engagement Acceptance

If the terms outlined here are acceptable to you, please sign and date this letter and return it to us. If you have any questions regarding our proposal, please do not hesitate to contact us.

Sincerely,

CPA & Company

_____

Partner

Approved by _____

President, XYZ Corporation

Date _____

Exhibit 50-9

Sample Work Plan—Implementation

Company name_____

Prepared by_____

Reviewed by _____

Date_____

Task	*Performed By*	*Start Date*	*Target Date*	*Completion Date*
Determine project schedule	_____	_____	_____	_____
Establish coding procedure				
Develop numbering system for each application	_____	_____	_____	_____
Document numbering system	_____	_____	_____	_____
Order hardware for client's primary location	_____	_____	_____	_____
Order hardware for secondary locations	_____	_____	_____	_____
Order software for all locations	_____	_____	_____	_____
Install/arrange hardware in client's primary location	_____	_____	_____	_____
Install/arrange hardware in secondary locations	_____	_____	_____	_____

Task	*Performed By*	*Start Date*	*Target Date*	*Completion Date*
Provide for system security				
Establish and document a password procedure	_____	_____	_____	_____
Establish backup procedures and prepare written policy	_____	_____	_____	_____
Arrange monitoring procedures	_____	_____	_____	_____
Install software at primary location	_____	_____	_____	_____
Install software at secondary locations	_____	_____	_____	_____
Establish data control procedures	_____	_____	_____	_____
Build master files	_____	_____	_____	_____
Verify initial balances	_____	_____	_____	_____
Arrange/provide training of personnel on operating system and applications software at primary location	_____	_____	_____	_____
Arrange/provide training of personnel on operating system and applications software at secondary locations	_____	_____	_____	_____
Conduct a post-installation review	_____	_____	_____	_____
Identify any necessary enhancements	_____	_____	_____	_____
Develop software update release procedures and schedule	_____	_____	_____	_____

Exhibit 50-10

Computer Activity Log

Company name _____

Prepared by _____

Date _____

Describe clearly the type of transactions you are entering or the type of reports you are printing by application.

Operator	*Date*	*Time*	*Transaction Description*	*Reports*

Exhibit 50-11

Backup/Restore Log

Company name _____

Prepared by _____

Date _____

File Backed Up	*Operator*	*Date*	*Time*	*Medium*	*Storage Location*

Exhibit 50-12

System Problem Report

Company name_____ Site_____

Prepared by _____ Date_____

Initial Problem Assessment Comments

A. Equipment _____ _____
B. Software _____ _____
C. Procedures _____ _____
D. Data _____ _____
E. Operator _____ _____
F. Support Services _____ _____
G. Environment _____ _____

Problem Information

Date_____ Time_____

System downtime: Yes_____ Number of minutes_____
Device downtime: Yes_____ Number of minutes_____
Number of lost time in minutes_____ Recovery time _____

Data Storage Media Labels in Use

Diskettes_____ Tapes_____
Cassettes_____ Other (specify)_____

Comments_____

_____

_____

Problem Information (continued)

CRT information (attach screen printed)_____

_____

Console message_____

_____

Description of problem_____

_____

File dump? Yes____ No____ File I.D._____

Submission to_____

Response request: Yes____ No____

Response: Immediate____ Deferred____

Company contacted_____ Company contact_____

Time of call _____ Time of return call_____

Originator's signature_____ Date_____

Problem Resolution

Referred to_____ Date_____

Actual problem code (check off problem) A___ B___ C___ D___ E___ F___ G___

Action required_____

Description of action taken _____

_____

_____

Date of action completed_____

Site of support_____

Repair completion: Date_____ Beginning time_____ Ending time_____

Hours billed_____

Signed_____ Date_____
(instructions follow)

Instructions for System Problem Report

Important: Complete the "System Problem Report" and attach any supporting evidence, such as a console log, generated reports, or a hard copy of appropriate screens. Complete all sections of the report through the originator's signature section, and have the person responsible for correcting the problem complete the problem resolution section.

Initial Problem Assessment

Place an X in the box to the left of the assumed cause of the problem. Mark only one box.

A. *Equipment*. If you think there is an equipment problem, indicate the equipment concerned.

B. *Software*. In case of program failure, enter the name or number of the program.

C. *Procedures*. If you believe there is a mistake in the procedures or operating instructions, identify the procedures or instructions concerned.

D. *Data*. No additional information is required.

E. *Operator*. Identify the system operator.

F. *Support Services*. Identify the support services group responsible for the problem.

G. *Environment*. If you think the problem is due to loss of power, static electricity, humidity, etc., indicate the suspected cause.

Data Storage Media Labels in Use

Record the labels of all data storage media (diskettes, tapes, cassettes, cartridges, packs, etc.,) in use when the problem occurred.

Problem Information

Indicate the date and exact time of failure. If the entire system goes down (i.e., will not work at all) or only a single device goes down, check "yes" and enter the number of minutes the system or device is down. Also enter the amount of lost time.

Lost time is the interval between the time processing failed to the time it resumed. *Recovery time* involves all the efforts necessary to reconstruct files, replace hardware, and so on, so that processing can resume. If there was recovery time, enter the number of minutes it took to recover the data.

Enter any error messages displayed on the screen. If your system has a console, enter any error message displayed on the console.

Under "Description of problem," write a clear and accurate description of the activities preceding the failure as well as a complete description of the error. In addition, record any recovery measures attempted. If your system has generated a memory dump (normally this happens only on large microcomputers), circle "yes" after "File dump?" and identify the file and the name of the person to whom you routed the dump ("submission to").

Response Request

Maintain a log of all phone calls you place for support service or equipment service pertaining to the problem. If the problem requires immediate attention, circle "immediate." Circle "deferred" if you placed the call and will get an answer at a later date.

Originator's Signature

After providing the above information, sign and date the report. File the report in the trouble report notebook next to the computer.

Problem Resolution

Enter the name of the person who will investigate and correct the problem, and record the date of referral. Have this person circle the actual cause of the problem (this may or may not be the same as the suspected cause noted previously).

Place an x in the box to the left of the appropriate action category:

- An x in "no action required" indicates that it is not necessary for anyone other than the originator to fix the problem.
- An x in "action complete" indicates that the problem was corrected. Enter the date of completion and a description of the action.

Record the date and time the support arrives on site, as well as the date and time the repair is completed. If you receive an invoice for the service, you can enter the actual number of hours billed and the invoice number.

The person responsible for correcting the problem signs and dates the report when corrective action is completed.

READER'S RESPONSES TO *AUTOMATING SMALL AND MEDIUM-SIZED BUSINESSES IN SELECTED INDUSTRIES*

Your assessment of this practice aid will help to ensure that future publications of the Management Consulting Services Division will be valuable to practitioners. Please photocopy this questionnaire and complete and mail or fax it to **Editor/Coordinator, Management Consulting Services Division, AICPA, 1211 Avenue of the Americas, New York, New York, 10036-8775**, facsimile number (212) 575-3846.

Thank you for your assistance.

---

1. How familiar were you with this subject before you read this practice aid?

0	1	2	3	4	5
Unfamiliar		Somewhat familiar		My area of expertise	

2. How useful is the practice aid to your practice?

0	1	2	3	4	5
Not useful at all				Extremely useful	

3. Is this practice aid sufficiently detailed? Yes ____ No ____

If no, please explain _____

_____

_____

4. Is there additional information that you think should have been included in this practice aid? Yes ____ No ____

If yes, please explain_____

_____

5. Do you think that an advanced level practice aid on this subject should be available?
Yes ____ No ____

6. Are you a member of the AICPA's Management Consulting Services Division?
Yes ____ No ____

If no, how did you learn about the availability of this practice aid? _____

_____

7. What other subjects would you like to see covered in Consulting Services Practice Aids?

_____

Additional comments and suggestions _____

_____

_____

Name and Address (Optional) _____

_____

_____

CONSULTING SERVICES PRACTICE AIDS

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