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EDP Engagement: Software Package Evaluation and Selection

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AICPA American Institute of Certified Public Accountants

NOTICE TO READERS

MAS practice aids are designed as educational and reference material for the members of the Institute and others interested in the subject. They do not establish standards or preferred practices. The standards for MAS practice are set forth in the Statements on Standards for Management Advisory Services (SSMASs) issued by the AICPA. However, since the services described in this series of practice aids are management advisory services, the standards in the SSMASs should be applied to them, as appropriate.

The MAS Division expresses its appreciation to the authors of this practice aid, Douglas M. Corban, M.B.A., CDP, and Robert F. Shriver, M.A., CDP. They are principals in the management advisory services practice of McGladrey, Hendrickson & Pullen and have extensive consulting experience in many industries. Messrs. Corban and Shriver each hold a certificate in data processing designating membership in the Data Processing Management Association.

During the preparation of this document, various members of the 1982–83 AICPA MAS Technical and Industry Consulting Practices Subcommittee, functioning in an advisory capacity, provided information, materials, and comments to the authors and the staff. The members of that subcommittee are listed below.

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Preface

This MAS 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 management advisory services. The Summers and Knight study, *Management Advisory Services by CPAs,* published by the AICPA in 1976, has subdivided such knowledge into seven areas: executive planning, implementation, and control; finance and accounting; electronic data processing; operations (manufacturing and clerical); human resources; marketing; and management science. Although these practice aids often will deal with aspects of those seven areas in the context of an MAS engagement, they are also intended to be useful to practitioners who provide advice on the same subjects in the form of an MAS consultation. MAS engagements and consultations are defined in Statement on Standards for Management Advisory Services 1, issued by the AICPA.

This series of MAS practice aids should be particularly helpful to practitioners who use the technical expertise of others while remaining responsible for the work performed.

MAS technical consulting practice aids do not purport to include everything a practitioner needs to know or do to undertake a specific type of service. Furthermore, engagement circumstances differ, and, therefore, the practitioner's professional judgment may cause him to conclude that an approach described in a particular practice aid is not appropriate.

Contents

Scope of This Practice Aid

The term *EDP engagement* covers any MAS study or MAS project in which a client is given advice or technical assistance related to any function involving EDP equipment.

The use of the computer is so pervasive in business and government today that many engagements—no matter what the objective—will touch on the client's use of EDP in some fashion. For example, an engagement to develop a cost accounting system will probably involve use of the client's computer to process, store, and retrieve data. Consequently, many engagements in which the primary objective is not EDP-oriented become, in effect, EDP engagements in part.

EDP engagements may conveniently be divided into two major categories: (1) those involving assistance to a client in developing an EDP system and (2) those involving advice to a client concerning the acquisition or operations of a computer installation. The following list contains a number of EDP-related activities that fall into each of the major categories.

Common Types of Activities in EDP Engagements

EDP Systems Development
- Long-range systems planning
- General systems planning and design
- Detail systems design
- Program specifications
- Implementation planning
- Programming and testing
- Systems testing
- Conversion and volume testing
- Implementation
- Postimplementation evaluation

EDP Acquisition or Operations
- Request-for-proposals (RFP) development and vendor evaluation and selection
- Vendor contract negotiation
- EDP operations review
- Computer performance evaluation
- Specific systems evaluations
- EDP security review

- Software package evaluation and selection
- Standards for EDP system design and development
- EDP departmental accounting systems development

The purpose of this practice aid is to familiarize the practitioner with the activities, approach, and methods normally involved in assisting clients with the evaluation and selection of software packages when hardware decisions have already been made.[1] The installation of software packages has become increasingly popular because of—

- The low cost of packages in comparison to custom-developed software.
- The availability of industry-oriented packages.
- The level of documentation often provided with the software.
- The availability of future enhancements and ongoing technical support for packaged programs.
- The growth in the number of users, which implies that software packages have been tested and refined.

However, the practitioner should be aware that packaged systems could offer several disadvantages, such as—

- An inability to meet key-application requirements.
- Inflexibilities requiring procedural changes within the client's business.
- An inability to adapt to future changes in the client's business environment.
- Vendor restrictions on modification of the product, which affect the ability to customize the package and complicate the updating process.

With knowledge of these potential advantages and disadvantages, the practitioner may assist a client through the entire sequence of activities described in this practice aid, or he may be asked to assist with a single activity or combination of activities in the system development process. Thus, each EDP engagement may differ from others in scope. This document may also be useful in other situations, but it would have to be adapted to the particular circumstances.

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1. Software packages are available for most computers, whether the system is a mainframe (largest), minicomputer, or microcomputer. While this practice aid deals primarily with client situations where there is an existing or decided-on mainframe or minicomputer, it also covers, in appendix E, software selection and evaluation for microcomputers. In the case of microcomputers, hardware selection is often subordinate to software selection.

Definitions

application. A specific business function, such as payroll, accounts payable, accounts receivable, general ledger, or inventory control. As in the case of packaged software, specific vendor offerings and terminology must be analyzed in order to correctly interpret the meaning of *application, application system,* and similar terms.

management's information and processing requirements. Information needs include reporting; processing requirements include the method by which data is entered and processed, the time needed to complete processing, and any special computations that may be used.

packaged software (also *application system package, application package, packaged application system,* and *software package*). A complete set of computer programs designed to accomplish a specific purpose. For example, the term *accounts receivable package* implies that all computer programs necessary to process accounts receivable adequately and completely are included in the package. Use of the term is somewhat loose; that is, because some systems are more complete than others, analysis of the specific application package is needed to determine its completeness as well as its individual features. In some cases *application system package* implies a complete general-business-accounting software system.

Typical Engagement Situations

Acquiring Hardware and Software

The client wishes to acquire computer hardware and software for the first time, and therefore he may have little or no experience with computers and the alternatives available. Additional emphasis on client education and training might be justified.

Expanding Computer Applications

Often the client is already making use of a computer but wishes to expand its applications. For example, the client may have installed a computer system in order to automate basic accounting functions, such as general ledger, payroll, accounts payable, and accounts receivable. Now, however, the client has identified a need for additional applications

in order to better control inventory, to improve analysis of sales efforts, and to produce additional management information.

Combining Stand-Alone Systems

Frequently the client wishes to combine a number of stand-alone automated application systems. In these cases existing application systems are not integrated; that is, the systems do not "talk" to one another or exchange data. For example, the installed systems may require manual entries to the general ledger for accounts payable transactions. Now the client wants the payables application to automatically pass information or journal entries to the general ledger. Solutions may involve installing an integrated accounting software system or developing custom interfaces that will provide for automatic journal entry.

Replacing Software Systems

Often the client wants to replace his present application software system with a newer one. The older system may have been installed before extensive software packages were readily available or may have been the result of custom development or in-house development a number of years ago. Now, however, extensive libraries of commercial software packages are available. These provide additional features, greater efficiency, and generally improved performance; software enhancements may also improve the effectiveness of the client's application system. If changes in the client's work methods frequently necessitate extensive manual reworking of the current automated system, this may be another reason for the client to switch to a different system.

Engagement Acceptance Considerations

A simplistic view of EDP can cause many misunderstandings, perhaps even outright failures, in a software package evaluation-and-selection engagement if the client is relatively uninformed about what must be done, how it will be accomplished, and what will result. Through lack of practical experience, client personnel may think of a computer as a machine that responds to every request immediately and without difficulty. It is therefore important that the practitioner be able to describe the evaluation-and-selection process to client management and staff in realistic and understandable terms and that they support the process.

The practitioner should accept an evaluation-and-selection engagement only if client management and staff understand its objective and how it can be achieved, the nature and amount of the client contribution expected, and the role the practitioner will play throughout the engagement.[2] The practitioner should also consider whether he can provide the necessary technical competence (from inside or outside his organization) when the client will need it. Such technical competence normally includes many different types and degrees of skill in order to perform planned tasks with maximum efficiency, and making each available at the appropriate time can be demanding.

If the practitioner anticipates that packaged software is unavailable for the application under consideration, this and the practicality (the cost and risk) of custom software should be discussed with the client prior to proceeding with the engagement.

Engagement Objectives and Client Benefits

The major objectives of a software package evaluation-and-selection engagement are (1) to determine the feasibility of using software packages and (2) to provide the client with the information necessary to make decisions about software and possible modifications to it. To accomplish these objectives, consideration is given to software availability, functional requirements, economics, and potential benefits.

In addition to potential benefits of software acquisition, the engagement itself benefits the client in several ways. For example, he is educated through exposure to the process of evaluating present business systems features and analyzing the feasibility of each software package in relation to computer equipment and systems techniques. An orderly, well-planned analysis of the data processing alternatives will help the client develop a greater knowledge and understanding of each alternative and its features, including costs and benefits within the framework of his requirements. This knowledge will, in turn, enable the client to better understand the potential effects of each alternative on his business.

Analysis of data processing alternatives will also provide risk-reduction benefits.[3] Without this analysis the client might be unduly in-

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2. See "Understanding With Clients in MAS Engagement," in SSMAS No. 2, *MAS Engagements* (New York: AICPA, 1982).

3. For illustrations of typical engagement benefits, see appendix A, "Sample Engagement Letter."

fluenced by vendors' sales presentations, but with it the practitioner can help the client to identify his information and processing requirements, as well as the needed system features, prior to contacting vendors.

Through interaction with the practitioner, the client improves his knowledge of the business application(s) addressed by the engagement. In addition, the client gains insight into the methods and procedures used by his staff. This knowledge may permit the client to observe more effectively and, thus, to change and correct other areas of the business as well. Consequently, the client can benefit greatly from the practitioner's objective evaluation and recommendations.

Engagement Scope

The scope of a software package evaluation-and-selection engagement includes—

1. Identifying specific application functions.
2. Analyzing and evaluating how various software packages perform these applications, which encompass—
    a. establishing estimated cost ranges.
    b. creating request-for-proposals (RFP) material.
    c. comparing vendor responses.
3. Making recommendations on the basis of already established system requirements.[4]

If all these tasks are performed, it should result in selection of the software best suited to the client's needs.

This process may, however, be complicated by the discovery of system features either desired but not available or available but not previously requested. Any cost-benefit evaluation of such a features discovery is considered an expansion of the scope of this engagement. Other related activities specifically excluded from the scope of this engagement[5] are hardware selection, definition of system requirements, contract negotiations, and implementation or testing assistance. The tasks that *are* included in this engagement are discussed in more detail in the engagement approach.

Although this practice aid is not designed specifically for the eval-

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4. The analysis required to determine the specifications is addressed in MAS Technical Consulting Practice Aid No. 1, *EDP Engagement: Systems Planning and General Design* (New York: AICPA, 1982). Details are included in appendix A of that document.
5. See "Scope of This Practice Aid."

uation and selection of a microcomputer system (hardware and software considered as a unit), the methodology is quite similar. The principle ways in which microcomputer system selection differs from packaged software selection include—

- Greater client involvement in the evaluation-and-selection process so that fees for consulting services are at a reasonable level when compared to the total hardware and software expenditure.
- Increased use of questionnaires and checklists during the analysis-and-evaluation process.
- Increased emphasis on hardware capabilities and costs during the evaluation, especially size and speed for various peripherals, expandability, maintenance record, and the number of current users.

Appendix E provides a more detailed description of the additional activities that should be considered for microcomputer system evaluation and selection. It also contains a list of potential areas of responsibility for the client and the practitioner during the microcomputer system selection process.

Engagement Approach

Engagement Phases

A software package evaluation-and-selection engagement may be divided into three phases: (1) review of the definition of requirements, (2) analysis and initial evaluation of alternatives, and (3) software package evaluation and selection.

Engagement Activities for the Phases

Phase 1—Review of the Definition of Requirements

The practitioner reviews the current definition of requirements that resulted from the activities described in the general systems planning phase discussed in "Scope of This Practice Aid" in MAS Technical Consulting Practice Aid No. 1, *EDP Engagement: Systems Planning and General Design.* This review should assist the practitioner in understanding the current requirements for each application.

Phase 2—Analysis and Initial Evaluation of Alternatives

Identify sources and features of packaged software. The practitioner identifies potential sources of packaged software for the application

area(s) reviewed during the first phase of the engagement. Sources can generally be located through published directories, data processing industry publications, client industry publications, and hardware vendors.[6]

Identify unique application requirements. The practitioner attempts to identify the specific areas within each application that are normally not included in packaged software. These areas may be specific to the client and generally require either customization of the software or additional system programming. Production of special reports or the storage of special historical information are examples of functions that may not be performed by packaged software.

In addition, packaged software may not be available for certain application areas that the client wishes to automate. In this instance the practitioner would discuss these findings with the client to determine the most appropriate action. If the benefits of automation in this area will be substantial, custom-developed software may be appropriate. If the benefits will be minor, the practitioner may want to discourage the client from including this application area as an automated system.

Prepare preliminary estimates of resource requirements (hardware, personnel, and so forth) and related costs. Based on his review of current and estimated future key-transaction volumes and processing and reporting requirements for each application area to be automated, the practitioner makes a preliminary estimate of additional hardware requirements.

Input, processing, and output requirements will determine, respectively, the number and type of input devices, the type and amount of mass-storage capability, and the speed and type of output devices.

Cost information for additional hardware can be obtained from hardware vendors and manufacturers or data processing industry directories. The practitioner may also need to estimate program modification charges based on published hourly programming rates or on previous experience in working with software suppliers. The amount of effort required to perform program modification will depend on the complexity of the change and the number of files and programs within the application system that are affected.

The cost of additional personnel can be estimated by using either published salary-survey information or the salaries of present data processing personnel as a basis. The practitioner determines the type and

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6. The practitioner then determines (1) the general price ranges for the packaged software, including one-time and recurring costs (license fees, installation fees, support fees, and so forth); (2) implementation and/or conversion assistance provided during and after the initial installation period; and (3) the level of ongoing support that will be provided for program modification and/or conversion.

level of additional personnel that will be required to convert, install, and operate the application(s) to be automated.

Other cost estimates may also be appropriate, and they would be accompanied by disclosure of the estimating technique and assumptions.

Develop preliminary conclusions and recommendations, and review them with client management. The practitioner develops preliminary conclusions and recommendations based on the availability of packaged software, the estimated costs of automating the application areas, the potential benefits, and other appropriate factors. On the basis of these recommendations, the client may choose to discontinue the engagement, redirect analysis efforts, or proceed to the third phase of the engagement.

Phase 3—Software Package Evaluation and Selection

Develop selection criteria. The practitioner assists the client in developing and ranking the primary factors that the client will use in selecting the best packaged software alternative. Factors often include total cost, the ability to fulfill the processing and reporting requirements, the level of ongoing technical support, vendor experience, and the client-vendor relationship. The selection factors will eventually be used to evaluate each alternative. (See appendix B, "Sample Vendor-Evaluation Work Sheet.")

Develop a request for proposals for packaged software. The processing and reporting requirements developed during the definition-of-requirements engagement are combined with the key-transaction volume for each application area to form a request for proposals (RFP) for packaged software. (The practitioner may wish to structure the RFP's processing and reporting requirements in a checklist, as an aid to later evaluation.) The RFP would also contain instructions regarding specific information that each vendor should include in a proposal, or it could contain instructions necessary to complete evaluation work sheets (for example, an additional hardware component schedule, a cost schedule, and so forth) that have been attached.

Submit the request for proposals to appropriate sources, and answer questions that may arise. The RFP is sent to the potential sources of packaged software that were identified during the second phase of the engagement, and they are allowed a reasonable amount of time to respond. These sources may benefit from the opportunity to ask questions and to clarify any points in the RFP that they do not understand. If the

systems requirements are complex, the practitioner may also consider conducting a bidders' conference.

Review and evaluate packaged software proposals. The practitioner reviews and evaluates the proposals received from the packaged software vendors in terms of the criteria for selection developed earlier in this phase of the engagement. The evaluation may consist of a comparison of additional hardware components proposed by vendors, a comparison of each software package's features and its benchmarks, a systems test, and a synopsis of each vendor's strengths and weaknesses. In addition, the evaluation includes developing a detailed schedule of one-time as well as continuing costs that the client would incur for each proposed package. The practitioner may also want to check vendors' references to ensure that the vendors have installation experience and can provide adequate levels of initial and ongoing support to the client. (See appendix C, "Sample Vendor-Reference Work Sheet.") Practitioner and/or client attendance at vendor presentations and visits to existing installations may also be appropriate.

Develop final conclusions and recommendations, and present them to client management. After vendor proposals have been evaluated, the practitioner usually prepares oral or written conclusions and recommendations and presents them to client management so that an informed decision regarding packaged software selection can be made. The practitioner may also consider additional services or involvement with the client beyond this decision point, including assistance in contract negotiations and installation planning. Such additional services would constitute separate engagements.

Optional Engagement Activities

Identifying Procedural Changes Necessary to Automate the Application Area(s)

During phase 2 of a software package evaluation-and-selection engagement the practitioner identifies procedural changes needed to automate the application area(s) under consideration. This activity includes numbering certain accounts or items, preparing and coding source documents, and using preprinted forms. This activity may be performed in less detail during phase 1 and in greater detail during phase 2, when the practitioner has a better understanding of the functions of the packaged software being evaluated.

Previewing Vendors

Depending on the number of vendors identified during phase 2, the practitioner may preview them in order to reduce the number who will receive the request for proposals (RFP) and be subsequently evaluated. This activity includes developing a potential vendor list, an interest letter, and factors that can be used to initially evaluate and select viable vendor candidates. The interest letter (see the sample in appendix D) is sent to each vendor on the potential vendor list, with an adequate time allowance for vendors to respond. Evaluation factors may include each vendor's ability to provide packaged software for specific applications, general cost ranges for the software, the level of technical support available and its related costs, and the desire or ability to modify the packaged software to fit specific requirements. Once vendor responses are evaluated, the candidates are chosen, sent the RFP, and asked to provide a packaged software quotation.

Project Control

Objectives and Scope

The practitioner uses normal project control techniques to ensure that the objectives of the project are achieved within the anticipated time frame and for the estimated fees. Any changes in project scope would be communicated to the client with additional fee estimates, if appropriate.

Reporting Progress

The client is kept informed about the status of the project. The practitioner may communicate project status orally or through informal file memorandums or progress reports.

Client Involvement

In addition to involvement in engagement planning and progress reporting, the client receives the deliverables and makes major decisions after—

- Reviewing the requirements definition and key-transaction volumes at the close of phase 1. The client verifies the accuracy of the information and revises the requirements as necessary.
- Reviewing the results of phase 2 activities. On the basis of the availability of packaged software products, their related costs, and other

important factors, the client decides whether to proceed to phase 3 of the engagement, to discontinue the project, or to redirect analysis efforts.

- Reviewing the results of phase 3 activities. Once the packaged software proposals are evaluated, the client can review the results of the evaluation. With the evaluation and the practitioner's recommendations, the client should have enough information to make a final selection.

Results

Results of Phase 1—Review of the Definition of Requirements

A modified list of requirements may result from the review of the definition of requirements.

Results of Phase 2—Analysis and Initial Evaluation of Alternatives

1. A list of packaged software sources that contains relevant information for the application(s) in question.
2. A list of application areas requiring program modification, including the specific features, reports, or processing requirements likely to require customization of a packaged program product and the relative complexity of the customization.
3. Preliminary estimates of additional resources, including hardware and personnel, that may be required to automate the application(s).
4. Preliminary cost estimates for packaged software, additional computer hardware, software modifications, personnel, and so forth.
5. Findings, conclusions, and recommendations based on phase 2 activities.

Results of Phase 3—Software Package Evaluation and Selection

1. Selection factors on which the client will base the final decision.
2. A request for proposals, which contains the requirements definition for each application, the relevant key-transaction volumes, and instructions to each vendor that will assist him in making a proposal to the client.

3. A report on software package evaluation and selection, including the following:

- A comparison of the features of each proposed software package.
- A comparison of the additional hardware components that individual vendors propose to automate each application.
- A list of each vendor's strengths and weaknesses, with the selection factors as the basis.
- Results of the reference checks of vendors performed during the project.
- A comparison of the additional one-time and recurring costs that each vendor anticipates the client would incur.
- The practitioner's findings, conclusions, and recommendations that are based on phase 3 activities.

Sample Engagement Letter

(CPA Firm's Letterhead)

Date

Client's Name
Address
City, State, Zip Code

Dear _____:

This letter contains our proposal to assist you in the evaluation and selection of application software.[1] We believe the following approach will provide you with an organized evaluation of the alternatives available and will thereby enable you to select application software in accordance with your requirements.

ENGAGEMENT OBJECTIVE

The objective of this engagement is to provide you and your personnel with the consultation, instruction, and technical guidance you will need in order to perform an effective evaluation and selection of application systems.

CLIENT BENEFITS

When this engagement is completed, you should receive the following benefits:[2]

- A careful evaluation and analysis of your processing and reporting requirements, which will determine the feasibility of using packaged software to meet these requirements and will allow you to consider which packaged software will be appropriate.
- The development of a detailed systems specification for the _____ application. This specification can be provided to appropriate vendors of packaged software and will help you compare and evaluate various software packages.

PROJECT SCOPE AND APPROACH

To accomplish the objective of this engagement, we will perform the following activities:

Phase 1—Review of the Definition of Requirements

The definition of requirements for each application will be reviewed to gain an understanding of your processing and reporting requirements. Discussions will be held with your personnel to itemize any changes or enhancements that you desire in the requirements defined for each application area.

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1. Depending on the nature and complexity of the engagement, the steps described in a proposal letter may be less or more detailed than the ones in this illustration.
2. The practitioner should match specific benefits (as opposed to the general ones listed here) to the client's objectives, which will depend on application areas.

Phase 2—Analysis and Initial Evaluation of Alternatives

a. Identify packaged software sources. We will identify sources that can provide software packages for the following application areas: _____, _____, and _____.

Packaged software sources will be located in published directories, data processing industry publications, and so on. These vendors will be sent a copy of the application requirements developed during the first phase of the project and will be asked to provide basic information regarding applications under consideration.

b. Identify those applications whose processing and reporting requirements cannot be met by general application software packages. Occasionally, because of the uniqueness of a company's requirements, general software packages for some applications are not readily available. These applications need to be identified because they may have a substantial impact on the initial costs of implementing automated systems. In some instances management may subsequently decide to eliminate these requirements from the systems objectives rather than incur the costs of developing customized application programs.

c. Prepare preliminary estimates of the resources required to automate the application areas and their related costs. On the basis of your current and projected key-transaction volumes and your processing and reporting requirements for each application area, a preliminary estimate of additional hardware requirements can be made. With these findings, a realistic range of estimated costs can be developed.

We will use published industry sources to determine the range of costs for hardware, application software, equipment maintenance, personnel, and other major-expense items.

d. Accumulate findings and formulate initial recommendations. At this time, enough information is available to evaluate the overall impact of implementing additional data processing capabilities. In addition to estimating one-time and recurring costs for the software itself, we will also identify areas that would require detailed systems design and programming.

e. Present preliminary findings to management. Management will now have sufficient information to decide whether to redirect efforts, discontinue the project, or continue the investigation as planned. If the investigation is continued, phase 3 would begin.

Phase 3—Software Package Evaluation and Selection

a. Prepare the selection factors. We will provide you with a list of factors often used in evaluating automation alternatives. In addition, we will assist you in ordering and quantifying these factors to best suit your needs. These factors will then be used to evaluate the vendors' proposals and assist in making the software selection decision.

b. Prepare a request for proposals for packaged software. We will provide each software vendor with the basic information required to make a specific proposal. The request for proposals (RFP) will use a standard format, which assists in comparing and evaluating the proposals, and

will include (1) a description of the current system, (2) a list of application requirements, and (3) a list of engagement requirements.

c. Submit the request for proposals to appropriate vendors, and answer vendors' questions. We will meet with the vendors, if appropriate, to further explain the RFP and to answer their questions.

d. Review and evaluate vendor proposals. We will evaluate vendor proposals on the basis of the factors described above and then eliminate less-qualified vendors. We will request additional information from the remaining vendors, for example, reference checks, financial stability, installation site visits, demonstrations, and so on. In addition, we will prepare a cost comparison of the proposed software as well as a detailed schedule of one-time and recurring costs.

e. Develop final conclusions and recommendations, and present them to management. We will provide a formal report containing the information you need to make a final decision. The report will be accompanied by a complete oral presentation.

PROJECT DELIVERABLES

The deliverables resulting from each phase of this engagement are described below:

Phase 1—Definition of Requirements
a. Processing and reporting requirements for each application.
b. Key-transaction volumes.

Phase 2—Analysis and Initial Evaluation of Alternatives
A phase 2 report containing—

- A list of packaged software sources.
- A list of application areas likely to require program modification.
- Preliminary estimates of additional resource requirements.
- Preliminary cost estimates.
- Preliminary conclusions and recommendations.

Phase 3—Software Package Evaluation and Selection
a. An RFP containing—

- A requirements definition for each application.
- Key-transaction volumes.
- Background information.
- Instructions to the vendors.

b. A phase 3 report containing—

- A comparison of packaged software features.
- A comparison of additional hardware requirements.
- A summary of each vendor's strengths and weaknesses.
- A summary of vendor-reference checks.
- A detailed cost comparison of the alternatives.
- Conclusions and recommendations.

The above deliverables will be accompanied by a complete oral presentation.

FEES

The fees for this engagement are based on our standard rates for actual time spent on the engagement plus out-of-pocket expenses. We estimate that our fees for providing the services proposed in this letter will be between $_____ and $_____. We plan to bill you monthly for the services provided.

Sincerely,

_____

Signer's Name
Title

Sample Vendor-Evaluation Work Sheet

Use

Using the vendor-evaluation work sheet is optional. The key to effective use is to rate vendors objectively. To accomplish this, it is essential that clients fully understand the importance of choosing and establishing ranks for the factors that will be used to select software. Then the practitioner, using these factors and their ranks, will evaluate each software vendor. This procedure provides flexibility, and the factors can range from a simple summary (as shown on page 20) to a list comprised of dozens of specifications representing a complete selection process.

Procedure (As Shown)

The client, with the advice and guidance of the practitioner, establishes the major factors that will be used to select the software package. In this sample, management has determined six major factors, as shown in column A and below:

1. Cost
2. Software Suitability
3. Software Service
4. Installation/Technical Support
5. Documentation
6. Vendor Capability

Management then ranked each factor in order of importance, from 6 points down to 1 point, as shown in column B.

Using objective and documented evaluation techniques and analysis, the practitioner evaluated and rated the vendors independently of one another on a scale of 1 to 10 points for each of the six major factors, with 10 the highest rating possible. These point ratings were entered on the *left* side of each vendor's factor blocks (shown in columns C through J) and were then multiplied by the level-of-importance rank in column B, thus yielding the vendor scores, shown on the *right* side of each vendor's factor blocks (columns C through J).

Since the best-qualified vendor for a particular factor receives the highest number of points and the factors are weighted in order of importance, the higher scores usually indicate the better-qualified software solutions.

Example

Vendor 3 represents the lowest cost, and he received a rating of 9 points and a score of 54 for the cost factor. However, vendor 3 did not provide appropriate solutions for software support and other factors. As a result, vendor 3 ranked least qualified for factors 2 through 6, and his total score is 74 points. This may be contrasted with vendor 6 who, although slightly more expensive, provided better software and service solutions and consequently received a total score of 122 points.

Scores resulting from this evaluation technique identify only approximate vendor achievement. Vendor 6, even though he has the highest total score, may not ultimately represent a workable solution because some of his software's features may, on closer examination, be unsuitable. In all cases vendor finalists selected through this technique must be further analyzed to identify any specific deficiencies. Then the practitioner reviews the deficiencies with members of management, who make the final selection.

Vendor-Evaluation Work Sheet

	A	B	C	D	E	F	G	H	J
	Selection Factors	Level of Importance (Rank)	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6	Vendor 7
1. COST Software cost	Points	6	2	4	9	1	5	8	3
	Score		12	24	54	6	30	48	18
2. SOFTWARE SUITABILITY Meeting your present needs Future flexibility	Points	5	4	4	1	2	3	3	5
	Score		20	20	5	10	15	15	25
3. SOFTWARE SERVICE Location of support personnel Service reputation	Points	4	4	4	1	2	5	6	3
	Score		16	16	4	8	20	24	12
4. INSTALLATION/TECHNICAL SUPPORT Assisting during installation Ongoing support	Points	3	3	3	2	2	5	5	4
	Score		9	9	6	6	15	15	12
5. DOCUMENTATION Quality of documentation	Points	2	8	3	2	3	5	5	4
	Score		16	6	4	6	10	10	8
6. VENDOR CAPABILITY Comfort with the vendor	Points	1	6	8	1	4	2	10	9
	Score		6	8	1	4	2	10	9
7.									
8.									
TOTAL		210	79	83	74	40	92	122	84

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Sample Vendor-Reference Work Sheet

Type of software (Include vendor's name.)		
Company		
Address		
Phone number	Person contacted	Title

Instructions: Rate the system and vendor on a scale of 0 to 4.
0 = Unacceptable   1 = Poor   2 = Average   3 = Good   4 = Excellent

Factor	Rating	Comments
1. Ease of Installation		How easy was it to actually get the system working?
2. Ease of Use		Can people be trained to use it quickly? How long does it take?
3. Reliability of Software		Does the software have any limitations or "bugs"?
4. Documentation Content/Quality		Is it easy to look things up and correct problems by using the documentation the vendor supplies?
5. Technical Support		Has the vendor or program author been helpful?
6. Performance Fulfillment		Does the system run as well and as fast as you expected it would?
7. Response to Software Trouble Calls		How long does it take the vendor to correct a software problem?
8. Training by Vendor		How helpful was the vendor and/or documentation in training people to use the system?
9. Average Rating (to be calculated by client after reference check)		

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What is the best thing about this software package? _____

_____

_____

_____

_____

_____

_____

_____

What is the worst thing about this software package? _____

_____

_____

_____

_____

_____

Would you buy this software package again?   Yes _____ No _____

FOR OFFICE USE ONLY

Date checked	Client
Check reviewed by	Title

22

Sample Interest Letter

(CPA Firm's Letterhead)

Date

Source Company's Name
Address
City, State, Zip Code

Gentlemen:

We are attempting to locate application software for a _(location)_ client. The client is a _(description of client's business)_ and currently has a _(name of manufacturer)_, model _____ computer system running _____, and _____ languages in a _(name of operating system language)_ operating system environment. In addition to the normal accounting applications of accounts receivable, accounts payable, payroll, and general ledger, the client is interested in automating his inventory control system, which should interface or be a part of the normal accounting applications.

If you can provide a software package or are aware of existing programs specifically designed to perform this function, please complete the enclosed Vendor Information Form and return it to us in the postage-paid envelope. We appreciate your attention to this request and look forward to hearing from you.

Cordially,

_____

Signer's Name
Title

VENDOR INFORMATION FORM

Firm Name _____

Address _____ Phone _____

City, State, Zip Code _____

Name of Contact _____ Title _____

The following integrated application packages can be provided:

Application	Yes	No	Number of Installations	Programming Language	Approximate Cost
Order Entry	____	____	_____	_____	$_____
Billing	____	____	_____	_____	_____
Accounts Receivable	____	____	_____	_____	_____
Inventory Control	____	____	_____	_____	_____
Payroll	____	____	_____	_____	_____
Accounts Payable	____	____	_____	_____	_____
General Ledger	____	____	_____	_____	_____
Fixed Assets	____	____	_____	_____	_____
(Other) _____			_____	_____	_____
(Other) _____			_____	_____	_____
Total					$_____

These packages run on a (name) computer, model _____,
manufactured by _____ in (location).
The manufacturer's names for peripherals and subsystems used on this system
are as follows:

Device	Manufacturer	Capacity	
Central Processor	_____	_____	KB
Disk	_____	_____	MB
Line Printer	_____	_____	LPM
CRTs	_____	_____	Characters
Terminal Printers	_____	_____	CPS
Other _____	_____	_____	

The name of this product is _____.

Are you an OEM or distributor of this product? ____Yes ____No

Do you supply installation support? ____Yes ____No

Do you supply ongoing programming and technical
   support? ____Yes ____No

The software support center in proximity to our client is located at _____
   and is staffed by _____ people, as follows:

____Sales ____Installation Technicians

____Programmers/Analysts ____All Other Areas ____Total

Comments _____

_____

Completed by _____ Date _____

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APPENDIX E

Comparison Between Packaged Software Selection and Microcomputer System (Software and Hardware) Selection

Activity	Packaged Software Selection		Microcomputer System Selection*		Comments
	Standard Activity	Performed by	Standard Activity	Performed by	
1. Define requirements	Yes	Practitioner	Yes	Client	The practitioner may request the client to complete an analysis questionnaire to obtain sufficient information regarding (1) the primary features of present systems within the client's business and (2) key-transaction volumes for the applications that will be automated. The features itemized on the questionnaire are then combined with features that may be desired but do not presently exist in the client's application systems.
2. Identify alternatives	Yes	Practitioner	Yes	Client and/or practitioner	Sources of packaged software can be located through published microcomputer directories, data processing industry publications,

* In selecting software when the hardware is to be a microcomputer, the relatively low cost of the hardware may make the choice of software more important. Therefore, the hardware selection may be based on the software selection, with the hardware and software acquired as a unit.

	Packaged Software Selection		Microcomputer System Selection		
Activity	Standard Activity	Performed by	Standard Activity	Performed by	Comments
					and client industry publications. The business sections of local telephone directories may also offer potential sources of hardware and/or software. Once several sources of packaged software have been located, attention can be turned to— • Type of software (UNIX, CP/M, MP/M, DOS, etc.). • Language (Basic, Pascal, etc.). • Microcomputer (microprocessor). This analysis would yield a list of potential suppliers of hardware and software and would indicate any constraints relating to the software and languages.
3. Identify unique requirements	Yes	Practitioner	Yes	Practitioner	The practitioner is involved in identifying application areas and features that are normally missing from packaged program products. The client should be aware of these specialized requirements

Activity					Description
					and will eventually decide whether to modify the selected software, change procedures within the organization to fit the packaged programs, or develop custom software to meet the requirements.
4. Estimate resource requirements and costs	Yes	Practitioner	Yes	Practitioner	Based on the current and future key-transaction volumes for the applications to be automated, the practitioner can estimate the capacities and speeds of various microcomputer components and peripherals that will be required.
5. Develop preliminary conclusions and recommendations	Yes	Practitioner	Yes	Practitioner	A general range of costs can be determined and discussed with the client. Packaged software availability and potential areas of program modification could also be discussed. Generally, no formal document is delivered at this time.
6. Develop selection factors	Yes	Practitioner	Yes	Client and/or practitioner	Generally this is not a formal activity, but rather a result of conversations regarding the client's buying motives. The practitioner could provide the client with a sample list of common selection factors to be ranked and used during the evaluation process.

Activity	Packaged Software Selection		Microcomputer System Selection		Comments
	Standard Activity	Performed by	Standard Activity	Performed by	
7. Develop a request for proposals (RFP)	Yes	Practitioner	No	—	This activity is normally not performed during the microcomputer evaluation-and-selection process.
8. Submit RFP to vendors	Yes	Practitioner	No	—	This activity is normally not performed during the microcomputer evaluation-and-selection process. However, the client needs to obtain detailed information describing the capabilities of the alternative hardware and software. This can be accomplished by either a telephone request or a visit to the vendor's site to obtain copies of hardware/software literature, reference manuals, or other printed materials. The client also requests formal price quotations for hardware, software, and other relevant costs.
9. Review and evaluate vendor proposals	Yes	Practitioner	Yes	Client	The client uses his original requirements list (activity 1) and

Step		Responsible party	Comments
(continued)	Yes	Client and practitioner	the information contained in the vendor-supplied documentation to prepare a comparison of software packages. Hardware requirements and expansion capabilities as well as one-time and recurring costs can also be compared. The sample vendor-reference work sheet (appendix C) can be followed for those references supplied by the vendor and the sample vendor-evaluation work sheet (appendix B) can be used to summarize the evaluation results.
10. Develop final conclusions and recommendations	Yes	Practitioner	The practitioner reviews the results of the client's evaluation of alternatives, identifies areas that may require further research, and offers advice on key issues. Additional comments regarding installation matters may be appropriate at this time.
11. Other considerations	N/A	—	
• Arrangements	Yes	Practitioner	The practitioner clearly defines his role and the level of client involvement expected during the microcomputer selection process. A brief letter summarizing the scope objectives, time frame,

Activity	Packaged Software Selection		Microcomputer System Selection		Comments
	Standard Activity	Performed by	Standard Activity	Performed by	
• Use of additional questionnaires and checklists					staffing, fees, and deliverables may be beneficial in further developing the client's understanding of the process. The practitioner is encouraged to develop questionnaires, checklists, and other structured tools to assist the client in defining his requirements and evaluating various alternatives. These tools will prove beneficial in guiding the client through the selection process and reducing practitioner time and related fees.

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