

Accounting For Software Expenditures

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Abstract

The Financial Accounting Standards Board and the American Institute of Certified Public Accountants have wrestled with the issue of the appropriate treatment for software development costs for many years. This article summarizes the professional pronouncements of the last 25 years that address this issue, identifying the business circumstances when such costs should be capitalized and when they should be expensed.

1.0 Introduction

The Financial Accounting Standards Board (FASB) and the American Institute of Certified Public Accountants (AICPA) have wrestled with the issue of the appropriate treatment for software development costs for over 25 years. Beginning with Statement of Financial Accounting Standards (SFAS) No. 2, *Accounting for Research and Development Costs*, issued in October 1974, and most recently culminating with Statement of Position (SOP) 98-1, *Accounting for the Costs of Computer Software Developed or Obtained for Internal Use*, regulators continue to be concerned with the correct accounting treatment of software costs that only grow in magnitude with every passing year. This article summarizes the professional pronouncements of the last 25 years that address this issue, identifying the business circumstances when such costs should be capitalized and when they should be expensed. Table 1 presents a listing of the authoritative pronouncements addressing the accounting treatment of software costs. Figure 1 summarizes the de-

cision process that will be discussed in the following pages.

2.0 Relevant Pronouncements

2.1 Statement of Financial Accounting Standards No. 2, Accounting for Research and Development Costs and Interpretation No. 6, Applicability of FASB Statement No. 2 to Computer Software

2.1.1 Scope

SFAS No. 2 with Interpretation No. 6 are the first pronouncements to explicitly address the treatment of software costs. Issued in October 1974 and February 1975, respectively, they consider the accounting treatment of software costs incurred to support research and development activities, as well as research and development costs associated with the development of new or higher level computer software capabilities¹. Excluded from SFAS No. 2 in its definition of research and development are the acquisition, development or improvement of a process by an entity for use in its selling or administra-

Readers with comments or questions are encouraged to contact the authors via e-mail.

Pronouncement	Sponsoring Organization	Date Issued	Title
Statement of Financial Accounting Standards No. 2	Financial Accounting Standards Board	October 1974	Accounting for Research and Development Costs
FASB Interpretation No. 6	Financial Accounting Standards Board	February 1975	Applicability of FASB Statement No. 2 to Computer Software
Statement of Position 81-1	American Institute of Certified Public Accountants	October 1981	Accounting for Performance of Construction-Type and Certain Production-Type Contracts
Statement of Financial Accounting Standards No. 86	Financial Accounting Standards Board	August 1985	Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed
Emerging Issues Task Force Issue No. 96-14	Financial Accounting Standards Board	June 1996	Accounting for the Costs Associated with Modifying Computer Software for the Year 2000
Emerging Issues Task Force Issue No. 97-13	Financial Accounting Standards Board	November 1997	Accounting for Costs Incurred in Connection with A Consulting Contract or an Internal Project That Combines Business Process Re-engineering and Information Technology Transformation
Statement of Position 98-1	American Institute of Certified Public Accountants	March 1998	Accounting for the Costs of Computer Software Developed or Obtained for Internal Use

Table 1- Recent Pronouncements Addressing the Treatment of Software Costs

tive activities. Thus, it does not consider accounting treatment of costs associated with the development of an online registration system or a general management information system.²

2.1.2 Classification of Costs

SFAS No. 2 with Interpretation No. 6 specify that costs incurred to purchase or lease computer software developed by others to support research and development activities be charged to expense as incurred unless the software has alternative future uses. Similarly, it

states that costs of software developed internally that will be used in the research and development activities of the entity should be charged to expense as they are incurred.

When software constitutes a product or process to be sold, leased or marketed, SFAS No. 2 indicates that costs incurred for the conceptual formulation or translation of knowledge into a design should be considered research and development costs. It also specifies that costs associated with the coding and testing of pre-production software models should be treated as

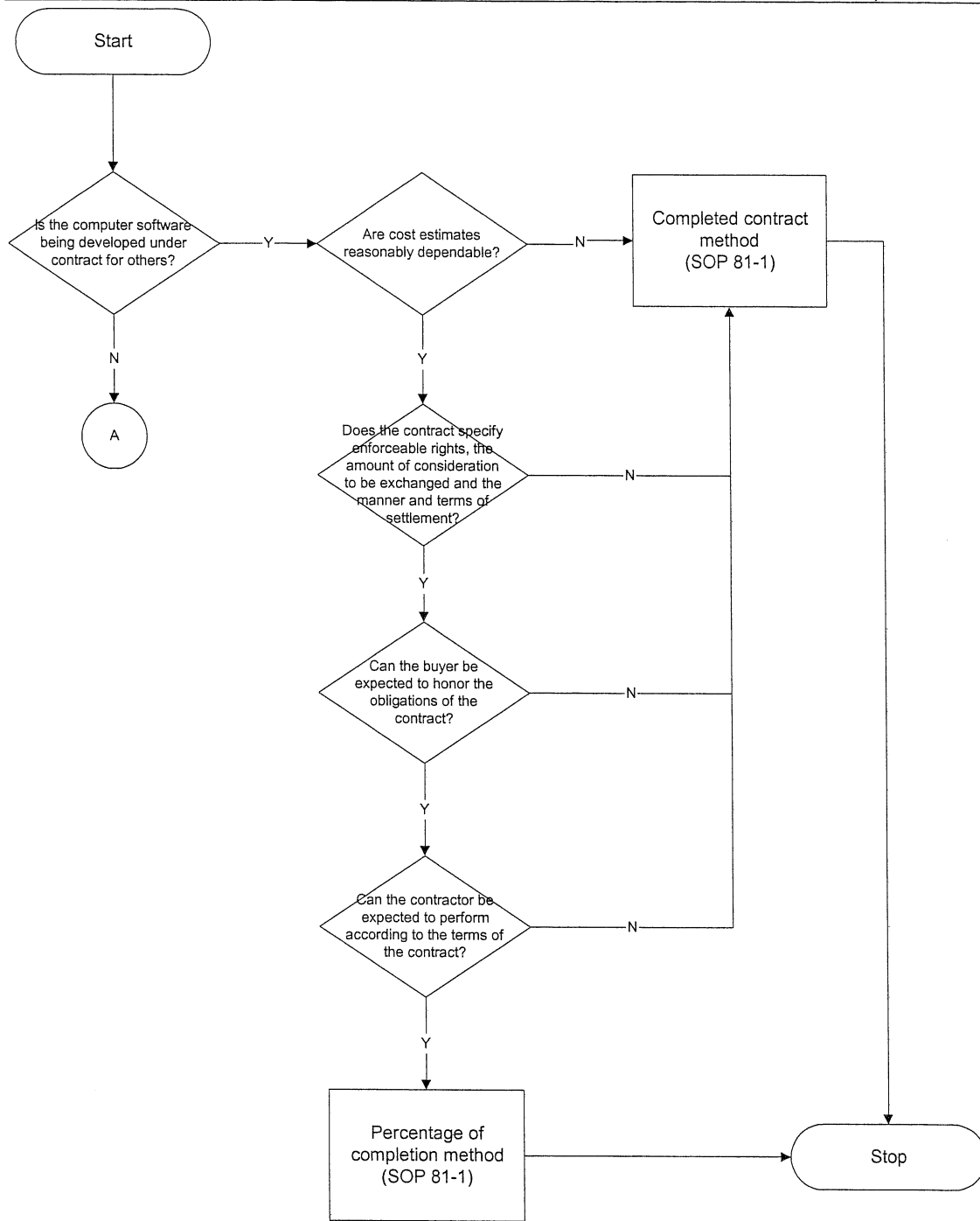


Figure 1A - Accounting Treatment for Software Costs

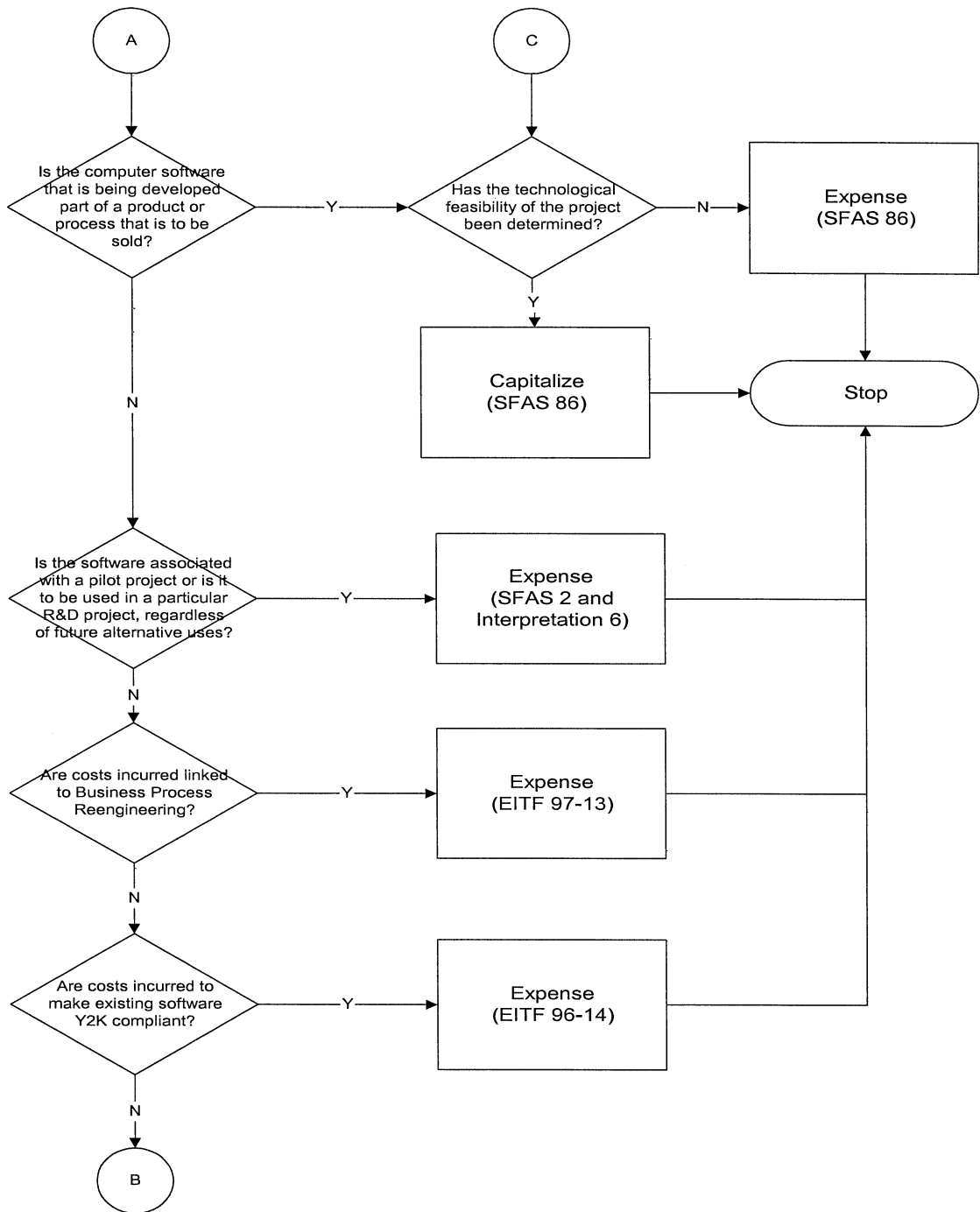


Figure 1B - Accounting Treatment for Software Costs

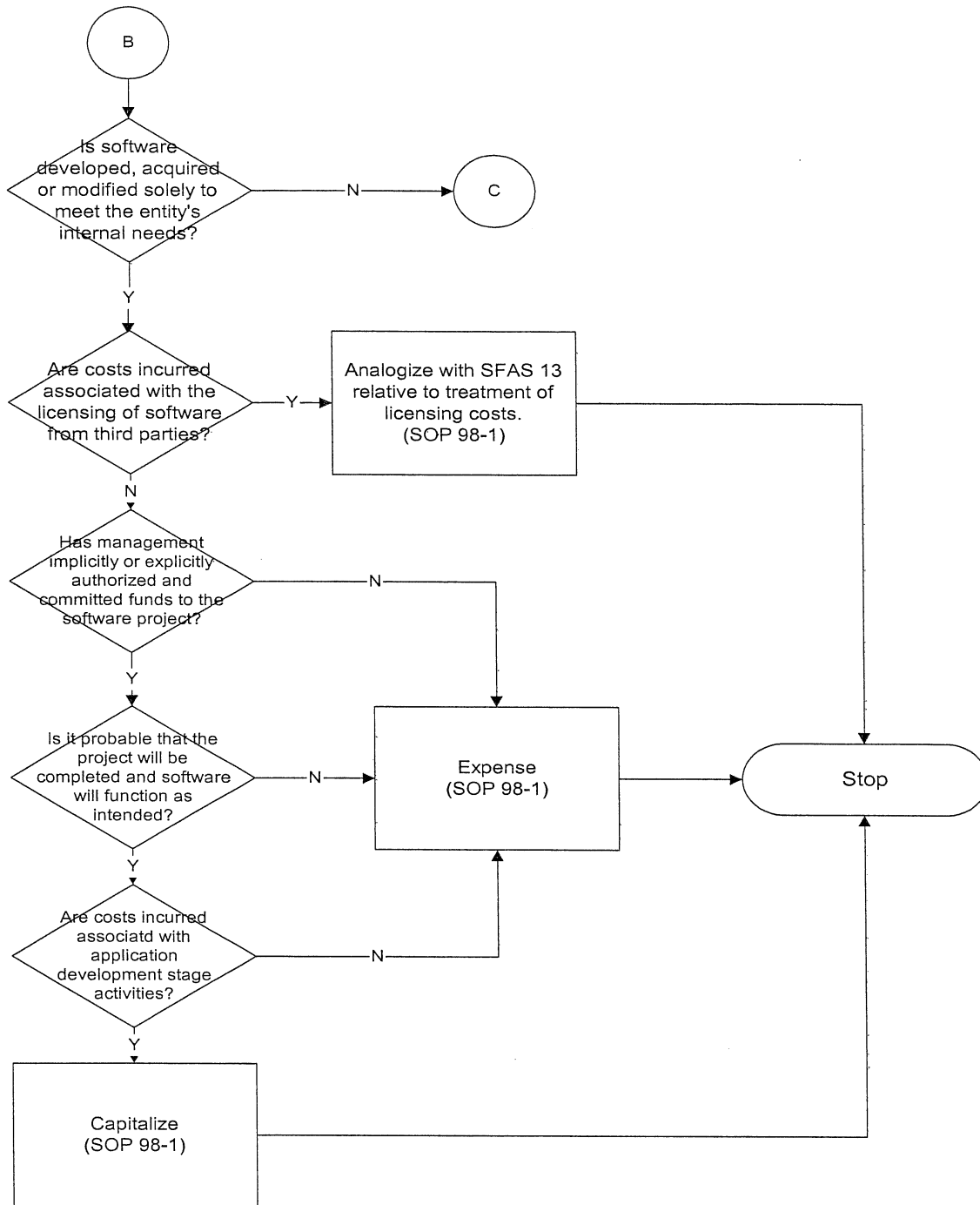


Figure 1C - Accounting Treatment for Software Costs

research and development and expensed as incurred.³

2.2 Statement of Position 81-1, Accounting for Performance of Construction-Type and Certain Production-Type Contracts

Statement of Position 81-1, *Accounting for Performance of Construction-Type and Certain Production-Type Contracts* addresses those circumstances when a entity engages in a systems development project not for its own use, but under contract for use by another entity. An example is the development of an online order entry system for use by a mail order entity under a fixed price contract.

Statement of Position 81-1 provides guidance relative to the recognition of revenue and expenses related to the development activity. It states that if estimates of costs are reasonably dependable *and* all of the following conditions exist, the contract should be accounted for using the percentage of completion method. The conditions include: (1) the specification in the contract of the enforceable rights of each party; (2) the amount of consideration to be exchanged and the manner and terms of settlement; (3) the buyer can be expected to honor the obligations of the contract; and (4) the contractor can be expected to perform according to the terms of the contract. Otherwise, the contract should be accounted for using the completed contract method.⁴

2.3 Statement of Financial Accounting Standards No. 86, Accounting for the Costs of Computer Software to Be Sold, Leased or Otherwise Marketed

2.3.1 Scope

In 1985, the Financial Accounting Standards Board issued SFAS No. 86 - *Accounting for the Costs of Computer Software to Be Sold, Leased or Otherwise Marketed*. This pronouncement, consistent with SFAS No. 2 and its

Interpretation No. 6, specifies that costs incurred in the process of creating a software product that are research and development should be expensed, while production costs should be capitalized.⁵ The Board considers a software product to encompass a single program, group of programs or product enhancement. These products are explicitly developed for the purpose of sale, lease or being otherwise marketed. This pronouncement does *not* address the treatment of costs associated with the development of software for internal use, concluding that the accounting for the costs of software used internally is not a significant problem, since most companies expense these costs as incurred.⁶

2.3.2 Classification of Costs

SFAS No. 86 states that all costs incurred to establish the technological feasibility of a software product are to be treated as research and development costs. It identifies technology feasibility as the point in the systems development life cycle when the entity has completed all planning, designing, coding and testing activities that are necessary to establish that the product can be produced to meet its design specification, including functions, features and technical performance requirements.⁷ If the development process includes the definition of a detailed program design, the product design and detailed program design must be completed. The completeness of the detailed program design, and its consistency with the product design, must be confirmed by documenting and tracing the design to the product specification. Finally, any uncertainties related to high-risk features must be resolved through coding and testing. If the design process does not include a detailed program design, technological feasibility is ascertained when a working software model has been completed and tested.

The FASB goes on to state that costs incurred subsequent to establishing the technological feasibility of a new software product should be capitalized. Such costs may include coding

and testing costs incurred in the completion of the development process. Capitalization ceases only when the product goes into general release to customers.

SFAS No. 86 specifies that entities should treat the costs of product maintenance and customer support as expenses to be charged to expense when related revenue is first realized or when costs are incurred, whichever comes first. Other costs that an entity may incur in the support of their software products include costs for duplicating the software, documentation, and training materials, and for physically packaging the product for distribution. The entity should capitalize these costs as inventory and charge to cost of sales when sold.⁸

2.3.3 Amortization of Capitalized Software Costs

SFAS No. 86 specifies that capitalized software costs should be amortized on a product-by-product basis with annual amortization being the greater of: (1) the amount computed using the ratio of current gross revenues for the product to the total of current, and anticipated future gross revenues for the product, or (2) the straight line method over the remaining useful life. Amortization begins when the product goes into general release.

In accordance with the pronouncement, the entity should charge inventory costs associated with duplication of computer software, document and training materials and physical packaging of the product to cost of sales on a unit-specific basis when revenue from the sale of the units is recognized.

SFAS No. 86 further requires that as of the balance sheet date unamortized costs of computer software be compared to the product's net realizable value and any excess written off. Net realizable value is defined as the estimated future gross revenues associated with the product reduced by future costs of completing and dispos-

ing of that product, including costs of maintenance and customer support to satisfy the entity's responsibility to its customers.⁹

2.4 Emerging Issues Task Force Issue No. 96-14, Accounting for the Costs Associated with Modifying Computer Software for the Year 2000

The Emerging Issues Task Force (EITF) of the Financial Accounting Standards Board addressed the financial impact of costs associated with the upgrading of software to ensure Y2K compliance and the proper accounting treatment. The EITF evaluated three positions -- one which supported the expensing of such costs, since they could not provide demonstrable future benefits; another which proposed their capitalization, because their unique nature was not analogous to repair and maintenance type expenditures; and a third, which took the middle ground proposing that costs should be accounted for in accordance with the entity's pre-existing policies. Ultimately the Task Force resolved the issue by stating that internal and external costs associated with making existing internal-use software Y2K compliant should be charged to expense as incurred.

2.5 Emerging Issues Task Force Issue No. 97-13, Accounting for the Costs Incurred in Connection with a Consulting Contract or an Internal Project That Combines Business Process Reengineering and Information Technology Transformation

Emerging Issues Task Force Issue No. 97-13, *Accounting for the Costs Incurred in Connection with a Consulting Contract or an Internal Project That Combines Business Process Reengineering and Information Technology Transformation* considers the treatment of costs associated with business process reengineering. It came to the attention of the FASB in 1997 that many entities, in an effort to solve Year 2000 problems, were embarking upon new initiatives that took advantage of e-commerce capabilities

and advances in computer technology. Such initiatives often encompassed business process reengineering activities and information technology transformation. While the AICPA's Accounting Standards Executive Committee (AcSEC) worked on SOP 98-1, *Accounting for the Costs of Computer Software Developed or Obtained for Internal Use*, the EITF found it necessary to address the treatment of third-party and internally-generated costs associated with projects that combine business process reengineering and information technology transformation.

Information technology transformation, particularly projects that involve entity resource planning software, frequently require that entities reengineer their business processes to connect into the software, rather than modifying the software to connect into existing business processes. Business process reengineering activities, performed either by third parties or internal staff, may include preparation of request for proposal, current statement assessment, process reengineering and ultimately restructuring of the work force. Because the work force performing these activities usually have backgrounds in business function, business control, internal audit, and internal control, the EITF concluded that such efforts focused upon process rather than software development. Thus, costs associated with the business process reengineering activities identified above should be expensed as incurred. In the EITF's view, business process reengineering costs should be treated no differently than costs incurred when modifying business processes to improve efficiency or control which are expensed as incurred in accordance with APB Opinion No. 17, *Intangible Assets*.

Because business process reengineering is often undertaken in conjunction with software acquisition or development, it is necessary for the entity to allocate either third-party contract costs or internal costs to the various components of the project.

2.6 Statement of Position 98-1, Accounting for the Costs of Computer Software Developed or Obtained for Internal Use

2.6.1 Scope

The Management Accounting Practices Committee of the National Association of Accountants (now the Institute of Management Accountants) in March 1985 submitted to the FASB an Issues Paper, *Accounting for Software Used Internally* which proposed that the costs of internal use software should be capitalized in certain situations. At the time, the FASB was developing Statement No. 86 and considered increasing the scope of Statement No. 86 to include computer software for internal use. The Board concluded that accounting for the costs of software for internal use was not a significant problem in 1985, and therefore did not increase the scope of Statement 86 to include internal use software. The Board said that the majority of entities expensed all costs of developing software for internal-use and was not persuaded that expensing internal-use software costs was improper.¹⁰

The absence of authoritative literature on the accounting for internal-use software led to diverse practices in accounting for this increasingly large cost. Some entities capitalized internal use software costs, while others expensed these costs when they were incurred. Some capitalized the costs of externally developed, or purchased, software and expensed the costs of internally developed software. This diversity of practice caused the Securities and Exchange Commission (SEC) and other interested parties to request that the standard-setters develop accounting standards to eliminate the inconsistencies in practice. The Chief Accountant of the SEC in November 1994 sent a letter to the EITF requesting that they develop accounting guidance for internal-use software costs. The EITF and AcSEC decided that the latter should develop the accounting guidance for internal-use software.¹¹

AcSEC's Statement of Position (SOP) No. 98-1 *Accounting for the Costs of Computer Software Developed or Obtained for Internal Use* provides guidance in the accounting for costs related to developing, obtaining, modifying and/or implementing internal use software. It applies to all non-governmental entities, including not-for-profit entities. It does not alter any of the provisions of FASB Statements No. 2, No. 86 or Interpretation No. 6.

AcSEC with SOP 98-1 hopes to eliminate diversity in the practice of accounting for software costs and thereby improve financial reporting for what has become a significant, unrecorded asset in many companies. AcSEC states that the cost of computer software developed or obtained for internal use is identifiable, has a determinate life, and relates to future economic benefits and thus, it should be capitalized and its value amortized over the period that it benefits. In addition, it concludes that users of financial statements will benefit from this information, since the marketplace considers technological capabilities when establishing the market value of a firm.

2.6.2 Definition of Internal-Use Computer Software

SOP 98-1 defines internal-use software as software acquired, internally developed or modified solely to meet the entity's internal needs. During the software's development or modification process, no substantive plan should exist or be in development that will culminate in the marketing of the software externally.¹² In some instances, when it is difficult to determine if such a plan to market the software exists, past practices of the entity related to the selling of internally developed software may help determine if the software is solely for internal use or subject to an implicit marketing plan. If such plans, formal or informal, exist, costs of software development are subject to FASB Statement No. 86.

2.6.3 Classification of Costs

SOP 98-1 identifies three stages in a typical software development project. The identification of the costs associated with these three stages is critical to determining which costs will be capitalized and which will be expensed. The three stages include: the preliminary project stage, the application development stage and the post-implementation stage. Only qualifying costs incurred during the application development stage are to be capitalized. Activities associated with the project planning stage are analogous to research and development activities, and therefore are to be expensed. In the context of the systems development life cycle, they encompass the systems planning phase, the systems analysis phase and part of the systems design phase. Only when management has reviewed the systems design alternatives, has committed funding for one of these alternatives, and it is probable that the project will be completed and the software will be used to perform the function intended, has the preliminary project stage concluded. As with the treatment of R&D costs, all expenses associated with this phase are expensed.

SOP 98-1 assumes that activities undertaken during the application development stage will result in probable future benefits to the entity, warranting the capitalization of the costs of these activities. The application development stage encompasses systems design activities associated with the preparation and submission of design specifications that pertain to a single design alternative, and systems implementation, including detailed systems design, coding, installation of the software on the system, costs to acquire or develop software to convert old data to the new system, and the testing of program and system, including parallel processing. In accordance with SOP 98-1, costs associated with these development activities are to be capitalized. Costs to be capitalized will include external direct costs of materials and services, and incurred payroll and payroll-related costs (benefits) for

employees directly involved with the development activity. Interest costs incurred while developing the internal use software should be capitalized in accordance with the provision of FASB Statement No. 34, *Capitalization of Interest Costs*. Overhead costs associated with this stage of the project are not capitalizable.

Two costs associated with the traditional systems implementation phase of systems development that should not be capitalized are: (1) the actual costs of converting data from the old system to the new system, (including scrubbing of the existing data, reconciliation of old and new data counts, creation of new or additional data and the conversion of the data) and (2) all training costs. These costs, as well as maintenance costs taking place during the post-implementation and operation stages, should be expensed as incurred. Table 2 summarizes the allocation of costs depending upon the phase of systems development in which they were incurred.

2.6.4 Other Issues: Amortization of Capitalized Costs, Treatment of Multiple-Element Arrangements, Impairment of Assets and Upgrades

Other issues addressed by SOP 98-1 include the amortization of capitalized costs, the

treatment of multiple-element arrangements included in the purchase price, impairment of assets and upgrades.

Systems Development Life Cycle Event	Accounting Treatment	
	Expense	Capitalize
<u>Preliminary Project Stage Activities</u> <i>Systems Analysis</i> <ul style="list-style-type: none"> ▪ Survey of present system ▪ Analysis of finding ▪ Identification of system requirements ▪ Identification of information needs ▪ Submission of systems analysis report 	 	
<i>Systems Design</i> <ul style="list-style-type: none"> ▪ Evaluation of design alternative ▪ Preparation of design specifications ▪ Submission of design specification ▪ Determination of design feasibility 	 	
<u>Application Development Stage Activities</u> <i>Systems Implementation</i> <ul style="list-style-type: none"> ▪ Select and train personnel ▪ Prepare detailed design, program and test programs ▪ Develop standards and documentation ▪ Perform system testing ▪ Convert files Development of software to access existing data by new system Other file conversion activities (e.g. scrubbing) ▪ Parallel operation 	 	
<u>Post-Implementation/Operation Stage Activities</u> <i>Operations</i> <ul style="list-style-type: none"> ▪ Application maintenance ▪ On-going support 	 	

Table 2 - Table of Activities Related to Internally Developed Software Projects

Capitalized costs of internal use software should be amortized on a straight-line basis, unless another systematic and rational basis is more representative of the software's use. Amortization should begin when the software is ready for its intended use, even if the software is placed into service in planned stages that exceed the reporting period. If the functionality of the software is dependent upon the completion of other modules, amortization should begin when both modules are ready for use.

Frequently, when internal-use software is purchased from external parties the price of the software includes multiple costs (e.g. design, coding, training, conversion and maintenance). Entities must allocate the purchase price of these individual elements based upon objective evidence of the fair value of each element and account for them accordingly.

Any impairment of internal-use software is to be recognized and measured in accordance with the provisions of SFAS No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*. Impairment is indicated when: (1) software is not expected to provide substantive service potential; (2) a significant change occurs in the extent or manner in which the software is used or is expected to be used; (3) a significant change is made or will be made to the software program; or costs of developing; or modifying the internal-use software significantly exceed the amount originally expected to develop or modify the software.¹³

During the development process, when it becomes apparent that the project will not be completed, capitalized costs should be treated as impaired assets. Indications of such impairment include: (1) a lack of expenditures budgeted or incurred for the project; (2) programming difficulties that cannot be resolved on a timely basis; (3) significant cost overruns; (4) information indicating that the costs of internally-developed software will significantly exceed the cost of

comparable third-party software, so that management intends to purchase the externally-developed software instead of completing the internally-developed software; (5) technologies are introduced in the marketplace which makes the completion of the internally-developed software imprudent; or (6) the business segment or unit to which the software relates is unprofitable or has been or will be discontinued.¹⁴

Upgrades and enhancements are modifications that allow the software to perform tasks it was previously incapable of performing. Costs of upgrades and enhancements can be capitalized only if it is probable that the expenditures result in additional functionality. Internal costs of upgrades should be expensed if the cost is incurred during the preliminary project or post-implementation/operation stages. Costs should be capitalized if incurred in the application development stage, as described earlier. Internal costs of maintenance are to be expensed, as incurred. If the internal costs of maintenance and minor upgrades cannot be separated in a cost-effective manner, the cost should be expensed as incurred.

When external maintenance and specific upgrades are included in a single cost, the cost should be allocated between the elements with maintenance costs expensed over the contract period. External costs of specific upgrades and enhancements should be expensed if the cost is incurred during the preliminary project stage or post-implementation/operation stages. Costs incurred should be capitalized in the application development stage, as described earlier. Contracts that include maintenance and unspecified upgrades should be expensed over the contract period on a straight-line basis.¹⁵

2.6.5 Internal-Use Computer Software Marketed

If during development, the entity decides to market internal use software, the entity should follow FASB Statement No. 86. An en-

tivity with a pattern of deciding to market internal-use software during its development creates a rebuttable presumption that any software developed is intended for sale, lease or other marketing and is subject to FASB Statement No. 86.¹⁶

Some entities develop only internal use software and do not have a pattern of developing and selling software. An entity could develop internal-use software and discover that the software is very marketable. The following example illustrates the proper accounting in these circumstances.


ABC Company (ABC) develops internal-use software for billing and accounts receivable with costs accounted for under SOP 98-1. Other companies become aware of ABC's software and approach ABC about a licensing agreement to use the software. ABC decides to market the billing and accounts receivable software to other companies. How should ABC account for the licensing fees for the software? Since ABC during development did not have any plan to market the software, and has no history of developing and marketing software, they would have capitalized costs in the application development stage as required by SOP 98-1. If subsequently the company decides to market the software, it needs to account for the licensing fees. SOP 98-1 requires that the net proceeds from licensing be applied to the carrying amount of the software. The net proceeds are the licensing fees less net direct incremental costs of marketing such as commissions, software reproduction costs, installation costs, warranty costs and service obligations. No profit would be recognized until the net proceeds from licensing and amortization have reduced the software carrying amount to zero. Any subsequent proceeds would be recognized as revenue as earned.¹⁷

3.0 Suggestions For Future Research

Presently there are no issues or matters pertaining to this topic that are under consideration with the Financial Accounting Standards

Board (FASB). However, there are two related developments that should be monitored. First, the Emerging Issues Task Force (EITF) of the FASB continues to deal with the Year 2000 issue and resulting ramifications. The Task Force reached a consensus that costs associated with modifying existing internal-use software to address the Year 2000 issue should be expensed as incurred. If, however, the organization's solution to the Year 2000 issue is to replace its software, then the cost of doing so should be accounted for in accordance with SOP No. 98-1. Second, the EITF has also dealt with reengineering costs that are incurred in conjunction with implementing new information systems. EITF Issue No. 97-13, "Accounting for Costs Incurred in Connection with a Consulting Contract or an Internal Project That Combines Business Process Reengineering and Information Technology Transformation" opines that costs associated with activities related to business-process reengineering should be expensed as incurred.

4.0 Conclusion

Over the last 25 years accounting regulators have promulgated a significant body of literature that addresses the treatment of software analysis, design, implementation and maintenance costs. This work will only increase in importance as software expenditures grow with every passing year. It is imperative that such expenditures be correctly classified as assets, to be written-off over the periods benefited, or as expenses, recognized in the period in which they are incurred. The reliability of accounting information and the quality of financing and investing decisions depends upon the appropriate treatment of such costs. The promulgation of these statements will lead to greater conformity of accounting practice, and thereby greater comparability of financial results, the primary motivation of the AICPA and the FASB in the issuing of these statements. 

Endnotes

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|---|---|----|--------------------------------|
| 1 | SFAS No. 2, Paragraph 1 | 9 | SFAS No. 86, Paragraph 10 |
| 2 | SFAS No. 2, Interpretation No. 6, Paragraph 4 | 10 | SFAS No. 86, Paragraph 26 |
| 3 | SFAS No. 2 Interpretation 6, Paragraph 7 | 11 | SOP No. 98-1, Paragraphs 2 & 3 |
| 4 | SOP 81-1, Paragraph 6 | 12 | SOP No. 98-1, Paragraph 12 |
| 5 | SFAS No. 86, Paragraph 2 | 13 | SOP No. 98-1, Paragraph 34 |
| 6 | SFAS No. 86, Paragraph 26 | 14 | SOP No. 98-1, Paragraph 35 |
| 7 | SFAS No. 86, Paragraph 4 | 15 | SOP No. 98-1, Paragraphs 24-26 |
| 8 | SFAS No. 86, Paragraph 9 | 16 | SOP No. 98-1, Paragraph 40 |
| | | 17 | SOP No. 98-1, Paragraph 39 |

Reader's Comments

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