Statement of Federal Financial Accounting Standards 10: Accounting for Internal Use Software

Status

Issued	October 9, 1998
Effective Date	For periods beginning after September 30, 2000
Interpretations and Technical Releases	None.
Affects	• SFFAS 10, paragraph 7, rescinds SFFAS 6, paragraphs 27-28, and provides a comprehensive standard for accounting for internal use software.
Affected by	• SFFAS 32 amends paragraph 35.

Summary

This statement provides accounting standards for internal use software. Under the provisions of this statement, internal use software is classified as "general property, plant, and equipment" (PP&E) as defined in Statement of Federal Financial Accounting Standards (SFFAS) 6, *Accounting for Property, Plant, and Equipment*. This statement includes software used to operate a federal entity's programs (e.g., financial and administrative software, including that used for project management) and software used to produce the entity's goods and services (e.g., air traffic control and loan servicing).

Internal use software can be purchased off-the-shelf from commercial vendors and can be developed by contractors with little technical supervision by the federal entity or developed internally by the federal entity. SFFAS 6 specified treatment for internally developed software different from that for commercial off-the-shelf (COTS) software and contractor-developed software. SFFAS 6 addressed COTS and contractor-developed software generally, providing that they were "subject to its provisions." On the other hand, specific provision was made for internally developed software.

SFFAS 6 prohibited the capitalization of the cost of internally developed software unless management intended to recover the cost through user charges, and the software was to be used as general PP&E. For capitalizable software, capitalization would begin after the entity completed all planning, designing, coding, and testing activities that are necessary to establish that the software can meet the design specifications.

At the conclusion of the PP&E project the Federal Accounting Standards Advisory Board discussed whether the standard for internally developed software should also apply to contractor-developed software. Also, some users of SFFAS 6 were unsure how to apply it to COTS and contractor-developed software. The Board decided, in December 1996, to review the issue and develop a separate standard for internal use software.

SFFAS 10

This standard requires the capitalization of the cost of internal use software whether it is COTS, contractor-developed, or internally developed. Such software serves the same purposes as other general PP&E and functions as a long-lived operating asset. This standard provides guidance regarding the types of cost elements to capitalize, the timing and thresholds of capitalization, amortization periods, accounting for impairment, and other guidance.

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Introduction

Purpose

1. This statement provides accounting standards for internal use software[1] used by federal entities. Federal entities purchase commercial "off-the-shelf" (COTS) software, hire contractors to develop substantially all of the desired software (contractor-developed), or develop software internally using their own employees, with or without a contractor's assistance (internally developed).

Scope

2. This statement establishes accounting standards for the cost of software developed or obtained for internal use. These include the cost of

   - software used to operate an entity's programs (e.g., financial and administrative software, including that used for project management),
   - software used to produce the entity's goods and to provide services (e.g., air traffic control and loan servicing), and
   - software that is developed or obtained for internal use and subsequently provided to other federal entities with or without reimbursement.

3. This statement provides standards on accounting for software consisting of one or more components or modules. For example, an entity may develop an accounting software system containing three elements: a general ledger, an accounts payable subledger, and an accounts receivable subledger. Each element might be viewed as a component or module of the entire accounting software system. This standard may be applied to the total cost of the software or, when appropriate, to individual components or modules. For example, one software module may be implemented before others, in which case, the provisions of this standard for capitalization, amortization, etc., would apply to it separately.

[1]The terms defined in the glossary will be in **boldface** when they first appear in the body of this document [see Appendix E, Consolidated Glossary]

Background

4. At the conclusion of the general property, plant, and equipment (PP&E) project, the Federal Accounting Standards Advisory Board (Board) discussed whether the standard for internally developed software should also apply to contractor-developed software. Also, some users of Statement of Federal Financial Accounting Standards (SFFAS) No. 6 were unsure of how to apply it to COTS and contractor-developed software. The Board decided in December 1996 to review the issue and develop a separate standard for internal use software.

5. In June 1997, the Board issued an exposure draft entitled *Accounting for Internal Use Software*. The Board received comments from 26 respondents and held a public hearing on December 18, 1997.

Materiality

6. The provisions of this statement need not be applied to immaterial items.

Effective Date

7. The provisions of this statement are effective for reporting periods that begin after September 30, 2000. Paragraphs 27 and 28 of SFFAS No. 6, *Accounting for Property, Plant, and Equipment*, which pertain to internally developed software, are rescinded upon this standard's issuance. Federal entities may continue their current accounting practices for internal use software for accounting periods beginning before October 1, 2000. Early implementation of this statement is encouraged.

Internal Use Software Accounting Standard

Definitions

8. Software includes the application and operating system programs, procedures, rules, and any associated documentation pertaining to the operation of a computer system or program. "Internal use software" means software that is purchased from commercial vendors "off-the-shelf," internally developed, or contractor-developed solely to meet the entity's internal or operational needs. Normally software is an integral part of an overall system(s) having interrelationships between software, hardware, personnel, procedures, controls, and data.

9. This definition of internal use software encompasses the following:

   a. Commercial off-the-shelf (COTS) software: COTS software refers to software that is purchased from a vendor and is ready for use with little or no changes.

   b. Developed software

      (1) Internally developed software refers to software that employees of the entity are actively developing, including new software and existing or purchased software that are being modified with or without a contractor's assistance.

      (2) Contractor-developed software refers to software that a federal entity is paying a contractor to design, program, install, and implement, including new software and the modification of existing or purchased software.

Software Development Phases

10. Software's life-cycle phases[2] include planning, development, and operations. This standard provides a framework for identifying software development phases and processes to help isolate the capitalization period for internal use software that the federal entity is developing.

11. The following table illustrates the various software phases and related processes. The steps within each phase of internal use software development may not follow the exact order

[2]There are no federal requirements regarding the phases that each software project must follow. The **life-cycle** phases of a software application described here are compatible with and generally reflect those in the Office of Management and Budget's (OMB) Circular A-130, *Management of Information Resources*, and *Capital Programming Guidance*; the Government Accountability Office's (GAO), *Measuring Performance and Demonstrating Results of Information Technology Investments* (*GAO/AIMD-98-89*, Mar. 1998); and the American Institute of CPA's Statement of Position No. 98-1, *Accounting for the Costs of Computer Software Developed or Obtained for Internal Use* (Mar. 4, 1998). Successful software projects normally would have at least an initial design phase, an application development phase, and a post-implementation/operational phase. Also, software eventually would become obsolete or otherwise be replaced and therefore have a termination phase. Circular A-130 acknowledges that the "life cycle varies by the nature of the **information system**. Only two phases are common to all information systems—a beginning and an end. As a result, life cycle management techniques that agencies can use may vary depending on the complexity and risk inherent in the project." (A-130, "Analysis of Key Sections," p. 63).

shown below. This standard should be applied on the basis of the nature of the cost incurred, not the exact sequence of the work within each phase.

Preliminary design phase	Software development phase	Post-Implementation/ operational phase
Conceptual formulation of alternatives[3]	Design of chosen path, including software configuration and software interfaces[4]	Data conversion
Evaluation and testing of alternatives	Coding	Application maintenance
Determination of existence of needed technology	Installation to hardware	
Final selection of alternatives	Testing, including parallel processing phase	

12. In the *preliminary design phase*, federal entities will likely do the following:

    a. Make strategic decisions to allocate resources between alternative projects at a given time. For example, should programmers develop new software or direct their efforts toward correcting problems in existing software?

    b. Determine performance requirements (i.e., what it is that they need the software to do).

    c. Invite vendors to perform demonstrations of how their software will fulfill a federal entity's needs.

    d. Explore alternative means of achieving specified performance requirements. For example, should a federal entity make or buy the software? Should the software run on a mainframe or a client server system?

    e. Determine that the technology needed to achieve performance requirements exists.

    f. Select a vendor if a federal entity chooses to obtain COTS software.

    g. Select a consultant to assist in the software's development or installation.

13. In the *software development phase*, federal entities will likely do the following:

[3]See OMB Circular A-11, *Planning, Budgeting, and Acquisition of Capital Assets;* Supplement to Circular A-11, *Capital Programming Guide* (July 1997); and Circular A-109, *Major Systems Acquisitions*, par. 11, "Alternative Systems."

[4]See OMB Circular A-109, *Major Systems Acquisitions*, par. 13, "Full-Scale Development and Production."

a. Use a system to manage the project.

b. Track and accumulate life-cycle cost and compare it with performance indicators.

c. Determine the reasons for any deviations from the performance plan and take corrective action.

d. Test the deliverables to verify that they meet the specifications.

14. In the *post-implementation/operational phase*, federal entities will likely do the following:

a. Operate the software, undertake preventive maintenance, and provide ongoing training for users.

b. Convert data from the old to the new system.

c. Undertake post-implementation review comparing asset usage with the original plan.

d. Track and accumulate life-cycle cost and compare it with the original plan.

Recognition, Measurement, And Disclosure

Software Used As General PP&E

15. Entities should capitalize the cost of software when such software meets the criteria for general property, plant, and equipment (PP&E). General PP&E is any property, plant, and equipment used in providing goods and services.[5]

Capitalizable Cost

16. For internally developed software, capitalized cost should include the full cost (direct and indirect cost) incurred during the software development stage.[6] Such cost should be limited to cost incurred after

[5]General PP&E, as distinguished from **stewardship PP&E**, is defined in pars. 23-25, in SFFAS No. 6, *Accounting for Property, Plant, and Equipment.*

[6]For a full discussion of direct and indirect cost, see SFFAS No. 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government* (June 1995), pars. 90-92. Also see pars. 94-95, Statement of Federal Financial Accounting Concepts No. 2, *Entity and Display.*

a. management authorizes and commits to a computer software project and believes that it is more likely than not that the project will be completed and the software will be used to perform the intended function with an estimated service life of 2 years or more and

b. the completion of conceptual formulation, design, and testing of possible software project alternatives (the preliminary design stage).

17. Such costs include those for new software (e.g., salaries of programmers, systems analysts, project managers, and administrative personnel; associated employee benefits; outside consultants' fees; rent; and supplies) and documentation manuals.

18. For COTS software, capitalized cost should include the amount paid to the vendor for the software. For contractor-developed software, capitalized cost should include the amount paid to a contractor to design, program, install, and implement the software. Material internal cost incurred by the federal entity to implement the COTS or contractor-developed software and otherwise make it ready for use should be capitalized.

Data Conversion Cost

19. All data conversion costs incurred for internally developed, contractor-developed, or COTS software should be **expensed** as incurred, including the cost to develop or obtain software that allows for access or conversion of existing data to the new software. Such cost may include the purging or cleansing of existing data, reconciliation or balancing of data, and the creation of new/additional data.

Cutoff For Capitalization

20. Costs incurred after final acceptance testing has been successfully completed should be expensed. Where the software is to be installed at multiple sites, capitalization should cease at each site after testing is complete at that site.

Multiuse Software

21. The cost of software that serves both internal uses and stewardship purposes ("multiuse software") should be accounted for as internal use software (e.g., a global positioning system used in connection with national defense activities and general operating activities and services).

Integrated Software

22. Computer software that is integrated into and necessary to operate general PP&E, rather than perform an application, should be considered part of the PP&E of which it is an integral part and capitalized and depreciated accordingly (e.g., airport radar and computer-operated lathes). The aggregate cost of the hardware and software should be used to determine whether to capitalize or expense the costs.

Bundled Products And Services

23. Federal entities may purchase software as part of a package of products and services (e.g., training, maintenance, data conversion, reengineering, site licenses and rights to future upgrades and enhancements). Federal entities should allocate the capitalizable and noncapitalizable cost of the package among individual elements on the basis of a reasonable estimate of their relative fair values. Costs that are not susceptible to allocation between maintenance and relatively minor enhancements should be expensed.

Capitalization Thresholds

24. Each federal entity should establish its own threshold as well as guidance on applying the threshold to bulk purchases of software programs (e.g., spreadsheets, word-processing programs, etc.) and to modules or components of a total software system. That guidance should consider whether period cost would be distorted or asset values understated by expensing the purchase of numerous copies of a software application or numerous components of a software system and, if so, provide that the collective cost should be capitalized.

Enhancements

25. The acquisition cost of enhancements to existing internal use software (and modules thereof) should be capitalized when it is more likely than not that they will result in significant additional capabilities. For example, in an instance where the federal entity adds a capability or function to existing software for making ad hoc queries, the cost would be capitalized.

26. Enhancements normally require new software specifications and may require a change of all or part of the existing software specifications as well. The cost of minor enhancements resulting from ongoing systems maintenance should be expensed in the period incurred. Also, the purchase of enhanced versions of software for a nominal charge are properly expensed in the period incurred.

27. Cost incurred solely to repair a design flaw or to perform minor upgrades that may extend the useful life of the software without adding capabilities should be expensed.[7]

Impairment

POST-IMPLEMENTATION/OPERATIONAL SOFTWARE

28. Impairment should be recognized and measured when one of the following occurs and is related to post-implementation/operational software and/or modules thereof:

    - the software is no longer expected to provide substantive service potential and will be removed from service or
    - a significant reduction occurs in the capabilities, functions, or uses of the software (or a module thereof).

29. If the impaired software is to remain in use, the loss due to impairment should be measured as the difference between the book value and either (1) the cost to acquire software that would perform similar remaining functions (i.e., the unimpaired functions) or, if that is not feasible, (2) the portion of book value attributable to the remaining functional elements of the software. The loss should be recognized upon impairment, and the book value of the asset reduced accordingly. If neither (1) nor (2) above can be determined, the book value should continue to be amortized over the remaining useful life of the software.

30. If the impaired software is to be removed from use, the loss due to impairment should be measured as the difference between the book value and the net realizable value (NRV), if any.[8] The loss should be recognized upon impairment, and the book value of the asset reduced accordingly. The NRV, if any, should be transferred to an appropriate asset account until such time as the software is disposed of and the amount is realized.

[7]However, in instances where the useful life of the software is extended, the amortization period would be adjusted.

The Board has considered the cost associated with modifying internal use software for the year 2000 (Y2K) and has determined that such cost should be charged to expenses as incurred, since it is a repair of a design flaw that allows existing software to continue being used. However, an enhancement could presumably provide enhanced capabilities and at the same time, as an integral part of the new code and other software enhancements, cure the Y2K problem. The total cost of such an enhancement should be capitalized rather than allocated between the Y2K cost and all other cost.

[8]Presumably, NRV will be zero for software. However, in the rare case that it is not zero, NRV should be recognized.

DEVELOPMENTAL SOFTWARE

31. In instances where the managers of a federal entity conclude that it is no longer more likely than not that developmental software (or a module thereof) will be completed and placed in service, the related book value accumulated for the software (or the balance in a work in process account, if applicable) should be reduced to reflect the expected NRV, if any, and the loss recognized. The following are indications of this:

- Expenditures are neither budgeted nor incurred for the project.
- Programming difficulties cannot be resolved on a timely basis.
- Major cost overruns occur.
- Information has been obtained indicating that the cost of developing the software will significantly exceed the cost of COTS software available from third party vendors; hence, management intends to obtain the product from those vendors instead of completing the project.
- Technologies that supersede the developing software product are introduced.
- The responsibility unit for which the product was being created is being discontinued.

Amortization

32. Software that is capitalized pursuant to this standard should be amortized in a systematic and rational manner over the estimated useful life of the software. The estimated useful life used for amortization should be consistent with that used for planning the software's acquisition.[9]

33. For each module or component of a software project, amortization should begin when that module or component has been successfully tested. If the use of a module is dependent on completion of another module(s), the amortization of that module should begin when both that module and the other module(s) have successfully completed testing.

34. Any additions to the book value or changes in useful life should be treated prospectively. The change should be accounted for during the period of the change and future periods. No adjustments should be made to previously recorded amortization. When an entity replaces existing internal use software with new software, the unamortized cost of the old software should be expensed when the new software has successfully completed testing.

[9]For example, federal agencies use the following planning guidance: OMB Circulars A-11, *Budget Planning, Budgeting, and Acquisition of Fixed Assets*; A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*; and A-109, *Acquisition of Major Systems*; OMB's *Capital Programming Guide* (July 1997); GAO's *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making* (Feb. 1997); and other federal guidance.

Disclosures

35. The disclosures required by SFFAS No. 6, paragraph 45, for general PP&E are applicable to general PP&E software. Thus, for material amounts, the following should be disclosed in the financial statements regarding the software:

- The cost, associated amortization, and book value.
- The estimated useful life for each major class of software.
- The method(s) of amortization.
- The above listed disclosure requirements are not applicable to the U.S. government-wide financial statements. SFFAS 32 provides for disclosure applicable to the U.S. government-wide financial statements for these activities.

Implementation

36. Cost incurred prior to the initial application of this statement, whether capitalized or not, should not be adjusted to the amounts that would have been capitalized, had this statement been in effect when those costs were incurred. However, the provisions of this statement concerning amortization and impairment should be applied to any unamortized cost capitalized prior to the initial application of this statement that continue to be reported as assets after the effective date.

Appendix A: Basis For Conclusions

General Property, Plant, And Equipment

37. As stated in Statement of Federal Financial Accounting Standards (SFFAS) No. 6, *Accounting for Property, Plant, and Equipment*, paragraph 10, the Federal Accounting Standards Advisory Board (Board) believes that measuring the cost associated with using general property, plant, and equipment (PP&E), and including that cost in a federal entity's operating results will help to achieve the operating performance objective. To meet the operating performance objective, the Board seeks to provide accounting standards that will result in

    - relevant and reliable cost information for decision-making by internal users,
    - comprehensive, comparable cost information for decision-making and program evaluation by Congress and the public, and
    - information to help assess the efficiency and effectiveness of asset management.

38. The Board believes that the cost of software acquired or developed for internal use that meets the SFFAS No. 6 criterion for general PP&E should be capitalized. Internal use software is specifically identifiable, can have determinate lives of 2 years or more, is not intended for sale in the ordinary course of operations, and has been acquired or constructed with the intention of being used by the entity.[10]

39. This standard does not apply to software that is an integral part of stewardship property, plant, and equipment. For example, if software is a part of a weapons systems, it would not be capitalized but included in the cost of investing in that weapons system. On the other hand, software used to accumulate the cost of acquiring that weapons system or to manage and account for that item would meet the criteria for general PP&E and should be capitalized.

40. Regarding any costs of internal use software acquired or developed for stewardship PP&E or stewardship investments, the Board chose to follow SFFAS No. 6, *Accounting for Property, Plant, and Equipment*, and SFFAS No. 8, *Supplementary Stewardship Reporting*, and expense them as incurred. For example, a research project may involve new software applications for computer simulation or modeling and meet the definition of a stewardship investment in research and development. In such cases, that software should be expensed as

[10]See SFFAS No. 6, par. 17.

part of that research and development stewardship investment. However, software used to manage, account for, and report on research and development projects and activities would meet the criteria for general PP&E and should be capitalized.

Comparison With SFFAS No. 6

41. As explained in the following paragraphs and in subsequent sections of the Basis for Conclusions, the accounting standard for internal use software required some tailoring of the provisions in SFFAS No. 6. First, the criteria in this standard for determining when to start amortizing/depreciating differs from SFFAS No. 6. SFFAS No. 6 provides that for constructed PP&E, depreciation begins when the PP&E is "placed in service." However, this standard defines the start of amortization for internal use software as the point when final acceptance testing is successfully completed. This additional criteria is necessary, especially for internally developed software—but also for contractor-developed and commercial off-the-shelf (COTS) software—because (1) testing plays a major role for software assets by demonstrating that the software product can meet the requirements and (2) of the need for clear point for ending the developmental phase.

42. A second area of tailoring involves "enhancements" and other potentially capitalizable expenditures incurred after the software and/or other general PP&E is in service. SFFAS No. 6 provides a criterion for capitalizable cost for general PP&E that is different from that required here for software enhancements. SFFAS No. 6 provides that cost incurred to either extend the useful life of existing general PP&E or to enlarge or improve its capacity should be capitalized.[11]

43. By contrast, this standard, as explained below, takes a different tack for software. It provides that material expenditures to add capability/functionality would be capitalized but expenditures that result in extending useful life or capacity would be expensed.

44. Finally, it should be noted that this standard provides additional procedures for recognizing and measuring impairment. The provisions in this standard and in SFFAS No. 6 are the same regarding situations where the software/general PP&E is impaired and will be removed from service in its entirety. Both provide that the loss is measured as the difference between the book value and the net realizable value, if any. However, as explained below, this standard also provides for instances where (1) operational software is only partly impaired and (2) developmental software becomes impaired.

[11]Par. 37.

Respondent's Comments

45. The respondents to the exposure draft (ED), *Accounting for Internal Use Software*, generally agreed with the principles presented therein. Most of the respondents agreed that the cost of internal use software and enhancements thereto should be capitalized, that capitalized amounts should be written down or off when the software is impaired, and that the guidance in the ED was sufficient to identify capitalizable cost and to recognize impairment. Two-thirds of the respondents agreed with the capitalization point in the ED—after (1) management authorizes and commits to funding a project and believes that it is more likely than not that the project will be successful and (2) the preliminary design stage is complete.

46. Some respondents raised objections and concerns, similar to those expressed in response to the original PP&E exposure draft, about capitalizing software, especially internally developed software. They were concerned that distinguishing between the cost of new and/or enhanced software on the one hand and maintenance and routine improvements that do not benefit future periods on the other hand would be difficult. Other respondents noted the rapidity with which technology changes and current software becomes obsolete, and said that the risky and uncertain nature of software development makes write-off much more likely for software than for general PP&E.

47. Notwithstanding these objections, the Board continues to believe that internal use software is similar to other general PP&E and should be accounted for accordingly. Internal use software and other **information technology** products and services are important resources for government operations. They are subject to similar risks of impairment and write-off and, otherwise, have general PP&E characteristics. Moreover, some respondents said they were already capitalizing their COTS software, which represents a large and growing percentage of their software portfolio.

48. The Board believes that the difference between internal use software and other general PP&E is not sufficient to justify different accounting treatment. This standard provides guidance for determining when capitalization starts and stops, how to amortize the software, how to determine and measure impairment, and other guidance.

Cost-Benefit

49. Several of the respondents opposed the capitalization of internal use software because they do not believe that the benefits of doing so are worth the cost. The respondents are concerned about the difficulty and cost of evaluating, measuring, and tracking such information. Some respondents point especially to the difficulty of allocating federal

employees' salaries and contractors' cost in multiuse contracts (e.g., systems development and maintenance).

50. Some argue (1) that capitalized internal cost related to developing internal use software is often unrelated to the software's actual value or is irrelevant, (2) that capitalization would result in arbitrary values and amortization periods, and (3) that such cost is frequently written-off, causing readers to be misled by the initial capitalization and subsequent write-off.

51. In Statement of Federal Financial Accounting Concepts No. 1, *Objectives of Federal Financial Reporting*, the Board points out that recommending accounting standards necessarily involves judgments about the cost and benefits of producing information and that standards can have different effects on different users. The Board is concerned that the benefits from standards should exceed the cost of complying with them but realizes that the benefits from standards are very hard to quantify.[12]

52. The Board is persuaded that the benefits from this standard exceed the cost. The Board believes that internal use software meets the definition of general PP&E and that general PP&E ought to be capitalized as an asset and amortized to the future periods benefited.

53. Capitalizing software contributes to the effective management of federal entities' resources. The careful measurement of the cost to construct capital assets, the matching of such cost to periods and programs benefitted on the federal entity's statement of net cost, and the comparison of cost with other alternatives for achieving the entity's goal comprise good management. Moreover, the regular review of software assets for impairment provides an early warning of problems. In short, such information provides periodic feedback about the quality and competitiveness of software products and services.[13]

54. The Board believes that expensing software costs incurred (1) in the preliminary design stage, (2) for software repairs and improvements that increase efficiency and useful life (see discussion of enhancements below), and (3) under materiality considerations will ease the burden of complying with this standard. Federal entities incur cost in the preliminary design stage exploring design and technical possibilities. Expensing this cost will limit the risk of "over-capitalization."

[12]Also, see OMB Circular A-130, *Management of Federal Information Resources*, par. 7d, which establishes the goal of having benefits exceed cost but notes that "the benefits to be derived from government information may not always be quantifiable."

[13]See OMB Circular A-130, par. 8a, "Information Management Policy," and par. 9b, as well as OMB's *Capital Programming Guide*, for detailed guidance on analyzing information technology through the planning, acquisition, and management-in-use phases.

55. The Board realizes that software—in general—and internally developed internal use software—in particular—present difficult materiality considerations. However, the Board believes that federal entities will be able to use their discretion under the materiality provisions of federal accounting standards to set reasonable limits to capitalization and avoid incurring excessive cost in tracking de minimis items.

56. SFFAS No. 4 calls for the full cost of resources that directly and indirectly contribute to the production of outputs to be assigned to outputs through appropriate costing methodologies. Cost effectiveness is a key consideration in selecting a cost assignment method. As a general rule, directly tracing costs and assigning costs on a cause-and-effect basis are more expensive than cost allocations, because they require detailed analyses and record-keeping for costs and activities. However, they are preferable because they produce more reliable cost information than cost allocations.[14] In any case, the method used to trace, assign or allocate costs must produce materially correct and complete costs.

57. The Board acknowledges that the service life of software is less predictable than that for other general PP&E. However, the Board is not persuaded that the difficulties of estimation and adjustment justify an accounting treatment different from that for other general PP&E. The Board believes that the additional guidance in the standard versus that in the ED will address the concerns raised by respondents and will be sufficient for federal entities to comply with the standard.

Cost To Be Capitalized—Direct And Indirect Cost

58. Many respondents agreed with the ED position that indirect cost should be expensed. The ED provided that such cost should be expensed because of cost-benefit considerations and the risk of over-capitalization.

59. Several respondents objected to the failure of the ED to require indirect as well as direct costs to be capitalized. Most of these respondents based their objection on the full-cost requirements in SFFAS No. 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*, believing that the Board would not be consistent with this standard unless full cost accounting were adopted.

60. The Board had reserved final judgment on the issue of capitalizing indirect cost at the time the ED was published. Several of the Board's members had argued that capitalizing only direct cost was inconsistent with SFFAS No. 4. Also, some Board members felt that, if the

[14]SFFAS No. 4, par. 143.

standard not did require indirect cost to be capitalized, the cost of internally developed internal use software would not be comparable with COTS and contractor-developed software, which would include indirect cost.

61. After reconsidering the issue, the Board is persuaded that SFFAS No. 4 requires both direct and indirect costs to be capitalized. Moreover, the new federal capital programming guidelines[15] require full life-cycle cost to be tracked, which is a more extensive requirement than that required by this standard, since it includes cost that would be expensed for accounting purposes.[16] Also, software asset values will be comparable among internally developed, COTS and contractor-developed software.

Commencing Capitalization

62. Two-thirds of the respondents agreed that capitalization should begin as described in par. 21 of the ED (and par. 16 of this standard): that is, when (1) management authorizes and commits to a software project and believes that it is more likely than not that the software will be completed and (2) the preliminary design stage is complete. Two of these respondents noted that the standard was consistent in this regard with the American Institute of Certified Public Accountant's (AICPA) draft Statement of Position (SOP).[17] Six other respondents would begin to capitalize only when "technological feasibility" is demonstrated.[18] Other respondents either would not capitalize internal use software under any circumstances or only COTS software.

63. The Board has added a framework for identifying the stages of a software project. Also, the standard now draws a sharper distinction between internally developed software on the one hand and COTS and contractor-developed software on the other. However, the Board believes that flexibility is needed so that the standard can be applied governmentwide.

[15]The Office of Management and Budget's (OMB) *Capital Programming Guide*, Supplement to OMB Circular A-11, Part 3 (July 1997), integrates the various executive branch and statutory asset management initiatives, including the Government Performance and Results Act, the Clinger-Cohen Act, and the Federal Acquisition Streamlining Act, into a single, integrated capital-programming guide.

[16]"Capital assets are land, structures, equipment, and intellectual property (including software) that ... have an estimated life of two years or more... The cost of a capital asset is its full life-cycle cost, including all direct and indirect cost for planning, procurement ... operations and maintenance, including service contracts and disposal." Capital Programming Guide, version 1.0, definition of capital asset, p. i (July 1997).

[17]Published March 4, 1998 as SOP No. 98-1.

[18]"Technological feasibility" is the criteria that the Financial Accounting Standards Board (FASB) used in Statement of Financial Accounting Standards (SFAS) No. 86, *Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed*.

64. One respondent asked for clarification regarding management's commitment to the software project. This is critical, since it is the starting point for the capitalization of software cost. The Board believes that management's authorization and commitment are a recognizable point for major software projects. A "go/no go" decision should be a visible milestone. Management should use its best judgment to identify when its commitment to a major software project takes place.

65. The Board decided that the "technological feasibility" test in SFFAS No. 6, which follows the Financial Accounting Standard Board's Statement of Financial Accounting Standards No. 86, should be changed. The Board believes that that test is appropriate for software developed for sale or lease or otherwise marketed but is not applicable to internal use software. Federal software should be capitalized because it is a long-lived operating asset rather than inventory to be sold. However, federal entities normally do not develop software for sale. If, in a rare instance, an entity should engage to develop software for another federal entity, SFAS No. 86 would be applicable.

Software Licenses

66. One respondent asked for guidance on accounting for licenses for COTS software. The Board had not discussed software licenses during its deliberations leading up to the publication of the ED. Software licenses can cover periods ranging from the entire estimated service life of the software (a "perpetual" license) to annual or more frequent periods and are similar to leases of general PP&E.

67. The Board believes that it would be appropriate for the federal entity to apply lease accounting concepts[19] and the entity's existing policy for capitalization thresholds and for bulk purchases to licenses. Immaterial costs would be expensed, but the entity should consider whether period costs would be distorted by expensing the license.

Capitalization Thresholds

68. In SFFAS No. 6, the Board carefully considered whether to take a prescriptive approach regarding capitalization thresholds or to permit each entity to set its threshold in light of its own particular operating environment. The Board decided that federal entities were too diverse to require one threshold for all entities; hence, the Board adopted a materiality approach whereby each entity establishes its own threshold as well as the guidance for bulk

[19]See SFFAS No. 5, *Accounting for Liabilities of the Federal Government*, "Capital Leases," pars. 43-46, and SFFAS No. 6, *Accounting for Property, Plant, and Equipment*, par. 20, for federal accounting standards for leases.

purchases. The Board continues to believe that permitting management discretion in establishing capitalization policies will lead to a more cost-effective application of the accounting standards.

Data Conversion Cost

69. The issue of whether to capitalize all, some, or no data conversion cost is a difficult one. Some argue that the cost of converting existing data to a new software system is analogous to the types of cost that the Accounting Principles Board Opinion (APB) No. 17, *Intangible Assets*, requires to be expensed as incurred because they are not specifically identifiable, have indeterminate lives, or are inherent in a continuing business and related to an enterprise as a whole—such as goodwill (APB 17, par. 24). The Board is persuaded that data conversion costs are operating costs and should be expensed.

Amortization Period

70. Most respondents said that no maximum period for amortization should be set in the standard. One respondent asked for clarification regarding the meaning of the general requirement that the amortization period be "consistent with management's plan for use." Another respondent asked whether the amortization period should begin when capitalization stops or when the system is put into use, saying that, often, there can be a significant time lag between these two events. One respondent asked for clarification regarding incremental implementation.

71. The Board has added additional guidance regarding the cessation of capitalization and commencement of amortization. The standard now focuses on the point when testing is complete. The term "operational," which some respondents found vague, is no longer used as a definitive point for cessation of capitalization. Also, provision has been made to treat each location and/or module separately.

Enhancements

72. Several respondents requested additional guidance for distinguishing maintenance from enhancements. The exposure draft proposed capitalizing the cost of changes to the existing system as an enhancement if it is more likely than not that the changes add capabilities or useful life. One respondent asked whether the cost of changes that make the software or system easier to use and users more efficient, but do not significantly change the capability/functionality (i.e., the system does not do any additional tasks), should be expensed or capitalized. Also, the ED proposed that year 2000 (Y2K) cost be expensed as incurred, even though they extend useful life. Several respondents asked whether Y2K cost were "enhancements."

73. The Board believes that an "enhancement" should be limited to instances where significant new capabilities are being added to the software. Merely making the software more efficient and/or extending its service life should not constitute a capitalizable cost. Software is more fluid and malleable than other PP&E and the Board concludes that a higher threshold for additional capitalization is reasonable.

Impairment

74. Two-thirds of the respondents said that the guidance on impairment was sufficient. Several respondents had questions about how the impairment provisions would apply to particular situations.

75. A respondent asked whether the availability of a new, updated version of COTS software with significantly improved functionality, efficiency, or effectiveness means that the older version is impaired even if the older version is still performing the functions for which it was designed. He asked whether the availability of new technology, whether adapted or not, render existing software "impaired." He asked about the affect of modernizing existing software to take advantage of the new technology. This respondent was concerned that if modernization is included in the definition of "impairment," there will be constant write-downs.

76. The Board believes that none of the situations cited by the respondent would meet the criteria of this standard in paragraphs 28-31. According to the criteria, in order for software to be considered impaired, it would have to have lost its service potential such that the federal entity would plan to remove it from service or the software would have had its capabilities reduced.

77. One respondent asked about the ED's proposal for expensing Y2K cost. Since the implementation date for this standard has been moved back to FY 2001, the issue is largely moot. However, the Board's rationale for recommending that the Y2K cost be expensed is that such cost is incurred to repair a design flaw rather than to add to the software's capabilities or useful life, although the latter would be affected.

Working Capital Funds

78. At least one respondent was concerned about the impact of capitalizing non-COTS internal use software on the cash flows, billing rates, and performance measurement of working capital funds (WCFs). This respondent said that developing software internally and through contractors could require long lead times during which WCFs would have to finance the project because WCFs could not start to recover the cost from customers until the software project was complete and amortization commences. Also, this respondent said that write-downs or write-offs due to impairment by rapidly changing technology would be difficult to

recapture from customers who expect and budget for consistent billing rates. This respondent believes that the capitalization of internally developed or contractor-developed software could result in fluctuating rates depending on when new projects come "on line" and on write-downs or write-offs due to impairment.

79. This respondent said that if write-downs or write-offs cannot be recovered from customers, then capital funds would be unavailable for investment, the WCFs' equity could be seriously impaired, and the WCFs would rapidly become unable to effectively provide the services for which they were established. The respondent said that WCFs are vulnerable to capital shortages because they operate on a break-even basis rather than generate retained earnings, and because they do not have access to private capital markets. This respondent's WCF currently capitalizes COTS software because it is a proven commodity; it becomes operational immediately and the WCF can begin chargingback the cost to customers.

80. Fixed assets usually provide important future benefits but require large amounts of resources up-front and extended periods for planning and acquisition. Making capital planning decisions is often difficult for agencies because full budget authority is required before the acquisition can commence and the entire acquisition has an immediate budgetary impact. This makes capital assets look expensive relative to, for example, annual lease payments even though the latter may be more expensive in the longrun.[20]

81. Notwithstanding these very real concerns, the Board concludes that the WCFs problem is one of budgetary control and program finance rather than of accounting. Congress has instituted various alternatives for WCFs to acquire capital. The Board's responsibility is to recommend what it considers the best accounting treatment considering all the circumstances and the Board's objectives.

Implementation Date

82. The 23 respondents who addressed the question of the implementation date were almost evenly divided as to the feasibility of an FY 1999 implementation date. Most respondents opposing the FY 1999 date said that federal agencies do not have the cost accounting systems as yet to account for capitalized cost but are developing such capabilities. Some respondents said that most federal agencies have a great deal "on their plate" now, when one considers the many recent initiatives. They said that an FY 2000 or FY 2001 implementation date would be better.

[20]See GAO, *Budget Issues: Budgeting for Federal Capital* (GAO/AIMD-97-5 Nov. 1996), for (1) an analysis of capital budgeting problems experienced by WCFs and federal agencies generally and (2) possible solutions.

83. One respondent said that the AICPA's SOP is effective for periods beginning after December 15, 1998, and that there is no reason for the federal government to adapt such a standard before the private sector does. The respondent said that federal implementation after the private sector implements its standard would allow the federal government to learn from the private sector's experience.

84. The Board believes that federal entities are striving to meet deadlines for audited financial statements, performance reports, cost accounting, technology management, and other initiatives. Entities resources are under stress to meet these deadlines. Thus, the Board believes that moving the implementation to FY 2001 is reasonable.

Appendix B: Glossary

See Consolidated Glossary in “Appendix E: Consolidated Glossary”.