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FINANCIAL AND TAX ACCOUNTING FOR COMPUTER SOFTWARE

Robert W. McGee

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FINANCIAL AND TAX ACCOUNTING FOR COMPUTER SOFTWARE

ROBERT W. MCGEE*

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I. INTRODUCTION

In the decade following World War II companies began to drastically increase their use of computers to solve business problems and to process data. At this early stage in the development of the computer industry, the companies that manufactured computer hardware also produced the software that was used with the machines. These manufacturers generally sold the systems software as part of the hardware without breaking down the purchase price into its hardware and software components.¹ The companies that used the hardware hired employees to construct any necessary "custom" software. Few companies constructed systems or applications software for sale apart from sales that were "bundled" with hardware.

As the use of computers became more prevalent in the 1960s, the demand for custom programming increased and led to the development of a new industry that would supply these software users with the programs they needed. It was still not a common practice, however, to purchase application programs because they were supplied free of charge by the hardware manufacturer.

In June, 1969, the policy of bundling hardware and software costs changed when IBM decided to "unbundle," or state the cost of their hardware and software separately.² This policy resulted in the crea-

1. For a discussion of computer software sales see Gordon & Starr, *Software Development Contracts and Consulting Arrangements: A Structure for Enforceability and Practicality*, 7 W. NEW ENG. L. REV. 487 (1985).

2. The decision to "unbundle" was made in part for antitrust reasons. See Schmedel, *IBM Discloses Its Long Awaited Plan for Separating Its Computer and Services Prices*, Wall

tion of the computer software industry. Its members began to produce software for sale to users of hardware. Companies that formerly wrote their own software were given the option of purchasing software. This option became very attractive. The costs of developing a program might exceed six figures, whereas a comparable program could be purchased for under \$50,000. This cost relationship led to a rapid increase in the number of firms that manufacture software for sale. A program that might cost \$1 million to construct could be sold to a multitude of customers for \$50,000 each. A software firm would, therefore, be able to break even after only twenty sales. Any additional sales would be almost pure profit because the cost of delivering a program is basically equal to the cost of the medium used (tape, disk, etc.) plus selling expenses.

A. The Beginning of the Problem: How to Account for Software

In the same year that IBM decided to unbundle, the Internal Revenue Service issued a pronouncement addressing the software issue.³ This Revenue Procedure provided tax accounting guidelines in connection with costs incurred to develop, purchase, or lease computer software. This procedure basically stated that the costs associated with the development of software could be either expensed as incurred or capitalized and amortized over five years or less. Thus, software development costs were to be accorded the same treatment as research and development costs for federal tax purposes.⁴

Purchased software, if bundled, could be capitalized along with the hardware. Software having a separately stated price could be amortized if treated as an intangible asset. Leased software is accorded the same treatment as rentals under regulation 1.162-11.⁵

Two years after that pronouncement was issued, the Internal Revenue Service issued a second pronouncement dealing with software.⁶ That ruling held that for depreciation and investment tax credit purposes, the cost of a new computer includes software costs not separately stated and capitalized in accordance with the taxpayer's

St. J., June 24, 1969, at 38 col. 1; Goetz, *When IBM Unbundled*, COMPUTERWORLD, Dec. 31, 1979/Jan. 7, 1980, at 35; Goetz, *Unbundling: Will 80's Repeat the 60's?*, COMPUTERWORLD, April 14, 1980, at 33; Note, *The Revolt Against the Property Tax on Software: an Unnecessary Conflict Growing Out of Unbundling*, 9 SUFFOLK U. L. REV., 118,124 (1974).

3. Rev. Proc. 69-21, 1969-2 C.B. 303.

4. *Id.* Section 174 of the Internal Revenue Code permits expensing or amortization of research and development costs at the taxpayer's option. I.R.C. § 174 (2)(b) (1976).

5. Treas. Reg. § 1.162-11 (1978).

6. Rev. Rul. 71-177, 1971-1 C.B. 5.

consistent practice. Another pronouncement issued that same year held that the capitalization of software costs with respect to a new computer, if such costs had previously been expensed, is a change in accounting method and requires the Commissioner's consent.⁷

B. *What is Software?*

Prior to June, 1969, when IBM unbundled and created the software industry, it was unnecessary to define software for accounting purposes. Software was accounted for as part of the hardware. The few programs that were developed internally constituted such a small percentage of the total expenditures for most companies that a formal software accounting policy was not necessary.

As software expenditures continued to increase and become more material, however, companies began to establish specific policies for software accounting. The definition of software then became important. Unfortunately, there is no single readily accepted definition of software. The broadest definition would be that software includes everything that is not hardware.⁸ The definition of software promulgated by the National Bureau of Standards⁹ and adopted by the U.S. Bureau of Standards is: "Computer programs, procedures, rules, and possibly associated documentation concerned with the operation of a data processing system."¹⁰

The Internal Revenue Service defines computer software as:

[A]ll programs or routines used to cause a computer to perform a desired task or set of tasks, and the documentation required to describe and maintain those programs. Computer programs of all classes, for example, operating systems, executive [sic] systems monitors, compilers and translators, assembly routines, and utility programs as well as application programs are included. "Computer software" does not include procedures which are external to computer operations, such as instructions to transcription operators and external control procedures.¹¹

Several courts and state legislatures have also defined software. Some have even drawn distinctions between systems software and applications software. The Supreme Court of Tennessee, for instance,

7. Rev. Rul. 71-248, 1971-1 C.B. 55.

8. See *Software Industry Analysis*, COMPUTER YEARBOOK 98 (1972).

9. *American National Dictionary for Information Processing*, American Standards Committee X3 Technical Report 1-77.

10. Federal Information Processing Standards Publication 11-1, September 30, 1977.

11. Rev. Proc. 69-21, 1969-2 C.B. 303.

has defined a systems (operational) program as one that is fundamental to the functioning of the hardware, or software that controls the hardware and makes it run.¹²

John W. Bryant and Lance R. Mather state that systems software consists of:

1. compilers, which are used to translate symbolic code into machine language and which are also capable of replacing a series of instructions with subroutines;
2. sorts, which assemble and file items of data in a certain sequence or order; and
3. utility routines, which perform functions such as transferring data from one magnetic tape to another.¹³

C. *The Tangibility Issue*

Another problem created by unbundling is the issue of tangibility. The Internal Revenue Service treats software as intangible and therefore not eligible for the investment tax credit unless bundled with hardware.¹⁴ At least one court has ruled, however, that software is tangible and qualifies for the investment tax credit.¹⁵ For state sales,¹⁶ use,¹⁷ and property¹⁸ tax purposes, the majority of courts have held that software is intangible and therefore not subject to the tax. Two recent cases, however, have held otherwise.¹⁹ For Uniform Commer-

12. *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405, 406 (Tenn. 1976); *see also*, *Greyhound Computer Corp. v. State Department of Assessments and Tax'n*, 271 Md. 674, 320 A.2d 52 (1974).

13. Bryant & Mather, *Property Taxation of Computer Software*, 18 N.Y.L.F. 59, 62 (1972).

14. Rev. Rul. 71-177, 1971-1 C.B. 5.

15. *Texas Instruments, Inc. v. United States*, 407 F. Supp. 1326 (N.D. Tex. 1976), *rev'd*, 551 F.2d 599, 611 (5th Cir. 1977).

16. *County of Sacramento v. Assessment Appeals Bd.*, 32 Cal. App.3d 654, 108 Cal. Rptr. 434 (1973); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976); *Bullock v. Statistical Tabulating Corp.*, 549 S.W.2d 166 (Texas 1977); *First Nat'l Bank of Fort Worth v. Bullock*, 584 S.W.2d 548 (Tex. Civ. App. 1979); *Janesville Data Center, Inc. v. Wisconsin Dep't of Revenue*, 84 Wis.2d 341, 267 N.W.2d 656 (1978).

17. *State v. Central Computer Services, Inc.*, 349 S.2d 1160 (1977); *First Nat'l Bank of Springfield v. Department of Revenue*, 85 Ill.2d 84, 421 N.E.2d 175 (1981); *Quotron Sys. v. Comptroller*, 287 Md. 178, 411 A.2d 439 (1980); *James v. Tres Computer Sys., Inc.*, 642 S.W.2d 347 (Mo. banc 1982).

18. *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615 (D.C. Cir. 1972); *Honeywell Information Sys., Inc. v. Maricopa County*, 118 Ariz. 171, 575 P.2d 801 (1978); *Greyhound Computer Corp. v. State Department of Assessments and Tax'n*, 271 Md. 674, 320 A.2d 52 (1974).

19. *Comptroller of the Treasury v. Equitable Trust Co.*, 296 Md. 459, 464 A.2d 248 (1983) (the sale of software constitutes the sale of tangible personal property subject to the

cial Code²⁰ and replevin²¹ purposes, software is tangible, but it is not tangible for collapsible corporation purposes.²² The sale of a prewritten program is currently taxable in thirty-three states²³ and exempt in thirteen,²⁴ with a few states not yet taking a position one way or the other.²⁵

D. Financial Accounting Rules

The present financial accounting rules pertaining to computer software are unclear. The Financial Accounting Standards Board (FASB) has issued several pronouncements that deal to a limited extent with software. One pronouncement²⁶ requires that research and development costs be expensed as incurred, unless there exists an alternative future use for the software. Another pronouncement²⁷ states that not all software costs are to be considered research and development costs. A third pronouncement²⁸ asserts that software costs not qualifying as research and development expenditures are not necessarily inventoriable or deferrable. None of the FASB pronouncements

Maryland sales tax); *Chittenden Trust Co. v. King*, 143 Vt. 271, 465 A.2d 1100 (1983) (software is tangible and subject to the Vermont use tax).

20. *Chatlos Sys., Inc. v. National Cash Register Corp.*, 479 F.Supp. 738,742-43 (D.N.J. 1979), *aff'd*, 635 F.2d 1081 (3d Cir. 1980); *cf. Triangle Underwriters, Inc. v. Honeywell, Inc.*, 457 F.Supp. 765,769 (E.D. N.Y. 1978), *rev'd on other grounds*, 604 F.2d 737 (2d Cir. 1979)(though intangible, software is more readily characterized as "goods" than "services" and, therefore, the sale of software is governed by the code); *see Carl Beasley Ford, Inc. v. Burroughs Corp.*, 361 F.Supp. 325 (E.D. Pa. 1973), *aff'd* 493 F.2d 1400 (3d Cir. 1974).

21. *F & M Schaefer Corp. v. Electronic Data Sys. Corp.*, 430 F.Supp. 988 (S.D.N.Y. 1977), *aff'd* 614 F.2d 1286 (2d Cir. 1979).

22. *Computer Sciences Corp. v. Commissioner of Internal Revenue*, 63 T.C. 327,346-47 (1974).

23. The sale of a prewritten program is currently taxable in Arkansas, California, Connecticut, Georgia, Hawaii, Idaho, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

24. The sale of a prewritten program is currently exempt from taxation in Alabama, Arizona, Colorado, Florida, Illinois, Indiana, Louisiana, Nebraska, New Jersey, New York, North Dakota, Texas, and the District of Columbia.

25. Alaska, Delaware, Montana, New Hampshire, and Oregon have not, at the time of this writing, taken a position on whether the sale of a prewritten program is taxable or exempt from taxation.

26. Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 2, "Accounting for Research and Development Costs"* (1974).

27. Financial Accounting Standards Board, *FASB Interpretation No. 6, "Applicability of FASB Statement No. 2 to Computer Software"* (1975).

28. Financial Accounting Standards Board, *Technical Bulletin 79-2, "Computer Software Costs"* (1979).

clearly detail when computer software qualifies for capitalization treatment. Furthermore, it is unclear whether software costs should be included in the balance sheet as tangible or intangible assets, although *FASB Interpretation No. 6*, paragraph 8, footnote 2 seems to indicate that software should be classified as intangible.²⁹

The Accounting Principles Board, the predecessor of the Financial Accounting Standards Board, has issued a pronouncement³⁰ requiring that intangibles acquired from others be recorded as assets and amortized using the straight-line method (unless some other method is more appropriate). That opinion also states that the cost of developing intangibles that are not specifically identifiable should be expensed as incurred. The issue of how to account for identifiable, internally developed intangibles is not addressed. It is questionable whether computer software should be classified as intangible in any event, since the courts seem unable to agree on the tangibility of software.

II. DEFICIENCIES IN CURRENT PRONOUNCEMENTS

A. *FASB Statement No. 2*

The FASB research and development statement³¹ provides as much ambiguity as it provides guidance. For instance, paragraph 8(a) defines research as "planned search or critical investigation aimed at discovery of new knowledge with the hope that such knowledge will be useful in developing a new product or service or a new process or technique or in bringing about a significant improvement to an existing product or process."³²

Research is an activity that occurs relatively early in the software construction process. Although *FASB Statement No. 2* requires that research expenditures be charged to expense as incurred, there is little guidance regarding which activities should be classified as research.

Paragraph 8(b) defines development as follows:

[T]he translation of research findings or other knowledge into a plan or design for a new product or process or for a significant improve-

29. At least two federal agencies permit the capitalization of software under certain circumstances. See United States General Accounting Office, *Illustrative Accounting Procedures for Federal Agencies: Guidelines for Automatic Data Processing Costs*, (Federal Government Accounting Pamphlet No. 4, GAO, 1978); see also Interstate Commerce Commission, *Accounting Series Circulation No. 194*, September 17, 1982, which is discussed in *Motor Freight Controller*, December, 1982, at 14.

30. Accounting Principles Board, *APB Opinion No. 17*, "Intangible Assets," (1970).

31. Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 2*, "Accounting for Research and Development Costs" (1974).

32. *Id.*

ment to an existing product or process whether intended for sale or use. It includes the conceptual formulation, design, and testing of product alternatives, construction of prototypes, and operation of pilot plants. It does not include routine or periodic alterations to existing products, production lines, manufacturing processes, and other ongoing operations even though those alterations may represent improvements and it does not include market research or market testing activities.³³

This definition of development can be applied to software accounting in two distinct ways. First, it can be interpreted to mean that the development phase does not end until software construction is essentially complete, because successful completion is uncertain until the development process is nearly complete. For the development phase to end it is necessary to have a working prototype. The fact that design modifications are necessary throughout the construction phase is evidence that development occurs through that phase.

Second, it can be interpreted that the development phase has essentially been completed before the construction phase begins. Under this interpretation, any design modifications that occur during construction are minor in nature, and are not part of the development phase. The formulation, design, and product testing activities occur prior to the construction phase. In fact, there must be a single product design before construction can commence. Although testing occurs during the construction phase, the testing at that stage involves the product's operation rather than the testing of alternative products. Furthermore, the software construction process does not culminate in the production of a prototype or the operation of a pilot plant. These guidelines are therefore irrelevant for purposes of determining the end of the development phase and the beginning of the production phase. The key point for determining the end of the development phase should instead be the establishment of technological feasibility.

Paragraph 31 states:

Computer software is developed for many and diverse uses. Accordingly, in each case the nature of the activity for which the software is being developed should be considered in relation to the guidelines in paragraphs 8-10 to determine whether software costs should be included or excluded. For example, efforts to develop a new or higher level of computer software capability intended for sale (but not under a contractual arrangement) would be a research

33. *Id.*

and development activity encompassed by this statement.³⁴

The term “new” or higher level of computer software capability lends itself to multiple interpretations. If “new” is interpreted in the technological sense, most software would be excluded because most software is developed using existing rather than new technology. “New” may also be interpreted to mean new in the market sense. For example, the first company to develop and market a payroll program incurs development costs, but companies that subsequently develop a similar product do not incur development costs.

The term “efforts to develop” may also be interpreted in at least two ways. It could be interpreted to include the whole construction process, which would place all construction expenditures in the development phase. It could also be interpreted to mean that “efforts to develop” cease prior to the construction phase. These interpretations obviously lead to opposite results, as construction expenditures would be classified as development costs calling for expense treatment in the first instance. Such expenditures would be nonresearch and development costs in the second instance, and might call for capitalization treatment instead.

Paragraph 9 of *FASB Statement No. 2* provides several examples of activities that could be considered research and development expenditures:

- (a) Laboratory research aimed at discovery of new knowledge.
- (b) Searching for applications of new research findings or other knowledge.
- (c) Conceptual formulation and design of possible product or process alternatives.
- (d) Testing in search for or evaluation of product or process alternatives.
- (e) Modification of the formulation or design of a product or process.
- (f) Design, construction, and testing of pre-production prototypes and models.
- (g) Design of tools, jigs, molds, and dies involving new technology.
- (h) Design, construction, and operation of a pilot plant that is not of a scale economically feasible to the enterprise for commercial production.
- (i) Engineering activity required to advance the design of a product to the point that it meets specific functional and economic requirements and is ready for manufacture.³⁵

34. *Id.*

35. *Id.*

Activities (a) through (d) generally occur prior to the construction phase. Example (e), "modification of the formulation or design of a product or process," can occur throughout the process, but occurs only to a minimal degree once the construction process begins. Design modifications can be viewed as part of the development phase or as part of the construction phase after development is completed.

Examples (f) through (h) are viewed by some as not being applicable to software accounting. The end product is not a prototype, but rather is the product itself. Others view the prototype as being the end product itself in the case of software, which would place the entire software construction process within the definition of research and development and therefore subject to expense treatment.

The last example relates to engineering activity. One view holds that manufacturing is merely the duplication of the program once the program is ready to market, and that all activity occurring prior to this point is research and development. Others view all engineering activity as occurring prior to construction.

Paragraph 10 lists examples of activities that typically would be excluded from research and development. These activities include:

- (a) Engineering follow-through in an early phase of commercial production.
- (b) Quality control during commercial production including routine testing of products.
- (c) Trouble-shooting in connection with break-downs during commercial production.
- (d) Routine, on-going efforts to refine, enrich, or otherwise improve upon the qualities of an existing product.
- (e) Adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity.
- (f) Seasonal or other periodic design changes to existing products.
- (g) Routine design of tools, jigs, molds and dies.
- (h) Activity, including design and construction engineering, related to the construction, relocation, rearrangement, or start-up of facilities or equipment other than (1) pilot plants . . . and (2) facilities or equipment whose sole use is for a particular research and development project. . . .
- (i) Legal work in connection with patent applications or litigation, and the sale or licensing of patents.³⁶

The first three examples are subject to several interpretations. These activities could be viewed as occurring only after sales have

36. *Id.*

commenced, and that similar activities that occur during construction are part of development. Another view is that these activities constitute construction and post construction activities, which indicates that construction costs should not be considered part of development.

B. *FASB Interpretation No. 6*

Another FASB pronouncement states that “[o]ther costs, including those incurred for programming and testing software, are research and development costs when incurred in the search for or the evaluation of product or process alternatives or in the design of a pre-production model.”³⁷

The phrase “search for or the evaluation of product or process alternatives” is subject to varying interpretations depending on whether development is regarded as being virtually complete at the beginning of construction or at the end. The term “preproduction model” is undefined and its meaning, as it applies to software, remains unclear. The preproduction model can be interpreted to be synonymous with prototype. Under such an interpretation, all costs incurred prior to the completion of the prototype can be viewed as research and development costs. Another view is that preproduction models are not made for software, although systems makeups or product simulators are sometimes made prior to construction.

The FASB pronouncement further states “costs for programming and testing are *not* research and development costs when incurred, for example, in routine or other on-going efforts to improve an existing product or adapt a product . . . to a particular requirement or customer’s need.”³⁸

This statement can be interpreted to mean that programming and testing costs are not research and development expenditures only when they are incurred to improve an existing product or adapt a product to a particular requirement or customer’s need. Alternatively, it can be interpreted to exclude programming and testing costs from classification as research and development for activities other than those given in the example. Furthermore, it can be argued that zeroing in on the costs associated with product improvement or adaptation misses the point entirely, and that the issue to be addressed should be accounting for construction costs. Lastly, one could conclude by a literal reading of the interpretation that all enhancement costs should

37. Financial Accounting Standards Board, *FASB Interpretation No. 6*, “Applicability of FASB Statement No. 2 to Computer Software” (1975).

38. *Id.*

be classified as nonresearch and development. It can be argued, however, that such a view is unreasonable. The process involved in producing enhancements to an existing product is essentially the same as that for a new product. Some of the costs involved in the construction of a new product are research and development costs.

C. *Technical Bulletin No. 79-2*

Technical Bulletin No. 79-2 states:

[A]ll costs incurred in producing a given software product or process are not necessarily research and development costs. However, a determination that software production costs are not research and development costs does not necessarily mean that they would be inventoriable or deferrable to future operations. Those decisions can only be made in light of all the facts and circumstances surrounding the particular situation.³⁹

One may conclude from the pronouncement above that little, if any, guidance is provided. The issue of research and development cost classification is not addressed. Although there is a hint that certain costs may be deferrable or inventoriable under certain circumstances, the pronouncement fails to elaborate when such circumstances might arise.

III. RELATED PRONOUNCEMENTS

A. *The Record and Music Industry*

It may be argued that the cost of producing a record master is similar to the cost of producing a computer program. In both cases:

1. The majority of the product's value is the result of the labor that is expended rather than the material that is used;
2. logical patterns must be developed (coding or music, either in written or nonwritten form) and transferred onto a physical medium such as a record, tape, or disk (although this is not necessarily the case for a computer program, which may be input directly into the computer);
3. the value of the finished product far exceeds the value of the material upon which the coding or music is recorded; and
4. both records and computer programs developed for sale have estimated economic lives and projected income streams that are difficult but not impossible to predict.

39. Financial Accounting Standards Board, *Technical Bulletin No. 79-2*, "Computer Software Costs" (1979).

The National Commission on New Technological Uses of Copyrighted Works states "[b]oth recorded music and computer programs are sets of information in a form which, when passed over a magnetized head, cause minute currents to flow in such a way that desired physical work is accomplished."⁴⁰

On the other hand, it may be argued that records differ from computer programs that are recorded on disks or tapes.⁴¹ For example, when information is transferred from a tape into the computer, the tape is often not even retained by the user. It may be discarded or returned. The information on the tape, unlike a phonograph record, is not complete and ready to be used at the time of its purchase. It must be translated into a language that is understood by the computer. Furthermore, a computer tape or disk is not necessary to transmit information. Such information can be sent over telephone wires or by satellite. It may even be programmed directly by the originator of the program.

In 1981, the Financial Accounting Standards Board issued a Statement that permits the capitalization of a record master under circumstances in which past performance and the artist's current popularity provide a sound basis for estimating that the cost will be recovered from future sales:

The portion of the cost of a record master born by the record company shall be reported as an asset if the past performance and current popularity of the artist provides a sound basis for estimating that the cost shall be charged to expense. The amount recognized as an asset shall be amortized over the estimated life of the recorded performance using a method that reasonably relates the amount to the net revenue expected to be realized.⁴²

40. FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 10 (1978)(hereinafter CONTU REPORT). For a discussion of CONTU and the CONTU REPORT see generally Stern, *Section 117 of the Copyright Act: Charter of the Software Users' Rights or an Illusory Promise?*, 7 W. NEW ENG. L. REV. 459 (1985). See also *Comptroller of the Treasury v. Equitable Trust Co.*, 296 Md. 459, 464 A.2d 248 (1983); *James v. Tres Computer Sys., Inc.*, 642 S.W.2d 347, 351-53 (Mo. banc 1982)(Rendlen, J., dissenting).

41. See Heinzman, *Computer Software: Should It Be Treated As Tangible Property for Ad Valorem Tax?*, J. TAX'N 184,184-186 (1972); *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615,617-20 (D.C. Cir. 1972); *James v. Tres Computer Sys., Inc.*, 642 S.W.2d 347,348-50 (Mo. 1982); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405,407-08 (Tenn. 1976).

42. Financial Accounting Standards Board, *FASB Statement No. 50*, "Financial Reporting in the Record and Music Industry" (1981). See also American Institute of Certified Public Accountants, *Statement of Position 76-1*, "Accounting Practices in the Record and Music Industry" (1976).

The Financial Accounting Standards board offered the following definition of record master:

The master tape resulting from the performance of the artist. It is used to produce molds for commercial record production and other tapes for use in making cartridges, cassettes, and reel tapes. the costs of producing a record master include (a) the cost of the musical talent (musicians, vocal background, and arrangements); (b) the cost of the technical talent for engineering, directing, and mixing; (c) costs for the use of the equipment to record and produce the master; and (d) studio facility charges. . . .⁴³

In its comment letter to the Exposure Draft that eventually became Statement No. 50, Coopers & Lybrand suggested that the language of the Statement be changed to specifically include Publishers of Music.⁴⁴ Similarly, other respondents⁴⁵ suggested including record producers and song writers⁴⁶ within the language of the Statement.

B. *Motion Picture Films*

Another Statement that might be related to computer software costs is *FASB Statement No. 53*, "Financial reporting by Producers and Distributors of Motion Picture Films."⁴⁷ It allows the capitalization of film production costs and requires such costs to be capitalized as film cost inventory and to be amortized using the individual-film-forecast-computation method⁴⁸ or the periodic-table-computation method.⁴⁹ The individual-film-forecast-computation method amortizes costs in the ratio of current gross revenues to anticipated total gross revenues, with adjustment for periodic changes in estimate.⁵⁰

43. *FASB Statement No. 50*, *supra* note 42.

44. Letter from Coopers & Lybrand to Director of Research and Technical Activities, Financial Accounting Standards Board (Sept. 11, 1981).

45. See Letter from New York State Society of Certified Public Accountants to Director of Research and Technical Activities, Financial Accounting Standards Board (Aug. 27, 1981)(File Ref. No. 1063-077); Letter from American Institute of Certified Public Accountants to Mr. Michael O. Alexander, Director of Research and Technical Activities, Financial Accounting Standards Board (Oct. 15, 1981)(File Ref. No. 1063-077).

46. Letter from Arthur Andersen & Co. to Director of Research and Technical Activities, Financial Accounting Standards Board, (Sept. 21, 1981); Letter from Arthur Young & Co. to Michael O. Alexander, Director of Research and Technical Activities, Financial Accounting Standards Board (Sept. 21, 1981).

47. See *Industry Accounting Guide*, "Accounting for Motion Picture Films" (1973); *Statement of Position 79-4*, "Accounting for Motion Picture Films" (1979).

48. Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 53*, "Financial Reporting in the Record and Music Industry" (1981).

49. *Id.* at paragraphs 10 and 13.

50. *Id.* at paragraph 12.

The periodic-table-computation method amortizes film costs using the historic revenue patterns of a large group of films.⁵¹

The analogy of motion picture films to software has been suggested in several court cases. Furthermore, several court cases dealing with sales, use, property, or federal taxation of motion picture films or master negatives⁵² have been cited by courts hearing software tax issues.⁵³

C. *Research and Development Arrangements*

Another FASB Statement⁵⁴ addresses the topic of research and development arrangements. During the course of several interviews conducted as part of this research project, it was suggested that some software vending companies enter into research and development arrangements in order to treat costs that would otherwise be expensed as assets. These arrangements may be structured so that a separate entity undertakes the task of constructing software that would otherwise be constructed internally. The separate entity then sells the finished

51. In its comment letter to the Exposure Draft of *Statement No. 50* (dated Aug. 27, 1981) (File Ref. No. 1063-074), the New York State Society of Certified Public Accountants recommended that reference to the periodic-table-computation be deleted because the film industry generally follows the individual film forecast method on a film-by-film basis. The letter also points out that other methods can always be used as long as the result would not be materially different, and any reference to other methods would only add confusion. Arthur Young & Co. made a similar comment (letter dated Sept. 21, 1981), as did the Accounting Standards Division of the AICPA (letter dated Nov. 13, 1981). Several respondents to the Exposure Draft also mentioned that reference should be made to interest capitalization costs.

Even though the periodic-table-computation method might not be the most widely used method in the film industry, it might find acceptance in the software industry because a larger variety of products are produced in the latter industry.

52. See *Bing Crosby Productions, Inc. v. United States*, 588 F.2d 1293 (9th Cir. 1979); *Walt Disney Productions v. United States (Disney I)*, 327 F. Supp. 189 (C.D. Cal. 1971), *modified*, 480 F.2d 66 (9th Cir. 1973), *cert. denied*, 415 U.S. 93 (1974); *Walt Disney Productions v. United States (Disney III)*, 549 F.2d 576 (9th Cir. 1977); *Boswell v. Paramount Television Sales, Inc.*, 291 Ala. 490, 282 So.2d 892 (1973); see also *Florida Association of Broadcasters v. Kirk*, 264 So.2d 437, *cert. denied*, 268 So.2d 534 (1972); *Crescent Amusement Co. v. Carson*, 187 Tenn. 112, 213 S.W.2d 27 (1948); *In re Merrill Theatre Corp. Sales and Use Tax*, 138 Vt. 397, 415 A.2d 1327 (1980); *Mount Mansfield Television, Inc. v. Vermont Comm'r of Taxes*, 133 Vt. 284, 336 A.2d 193 (1975); *Columbia Pictures Industries, Inc. v. Commissioner*, 176 Conn. 604, 410 A.2d 457 (1979); *United Artists Corp. v. Taylor*, 273 N.Y. 334, N.E.2d 254 (1937); *Turner Communications Corp. v. Chilivis*, 239 Ga. 91, 236 S.E.2d 251 (1977); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976); *Michael Todd Co. v. County of Los Angeles*, 57 Cal. 2d 684, 21 Cal. Rptr. 604, 371 P.2d 340 (1962).

53. See, e.g., *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976).

54. Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 68*, "Research and Development Arrangements" (1982).

software product to the arranging firm, which promptly records the software as an asset. Had the software been constructed internally, there would be pressure to expense the construction cost as research and development. A survey was mailed to software vendors in conjunction with the research for this article. The survey supported the above theory, although the responses revealed that a very small percentage of software vendors participate in research and development arrangements. Those that do have valid business reasons for participating, apart from the beneficial financial statement effect.⁵⁵

IV. SOFTWARE COSTS: SHOULD THEY BE CAPITALIZED OR EXPENSED?

Prior to June, 1969, when IBM unbundled, this question was not an issue. Software costs were included in the price of the hardware. The costs were amortized over the useful life of the hardware. After IBM began stating its software prices separately from its hardware prices, and as firms began to develop their own software, this question frequently began to be raised. Over the past two decades, software costs have become an increasingly important expenditure in most corporate budgets. While it was easy to expense relatively minor software costs in the past, for reasons of materiality it has become increasingly difficult to state emphatically that software expenditures are immaterial when they continue to increase every year.⁵⁶

FASB defines assets as "probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events."⁵⁷

The Statement states further:

An asset has three essential characteristics: (a) it embodies a probable future benefit that involves a capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash inflows, (b) a particular enterprise can obtain the benefit and control others' access to it, and (c) the transaction or other event giving rise to the enterprise's right to or control of the

55. R. MCGEE, ACCOUNTING FOR SOFTWARE COSTS (1984). Chapter five of ACCOUNTING FOR SOFTWARE COSTS discusses vendor participation and research development costs.

56. A spokesman for ITT has revealed that \$27.9 million in software development costs were placed on the balance sheet as assets in 1982, compared to earnings of \$702.8 million. See Hudson, *SEC May Curb Accounting Rule for Software*, Wall St. J., April 8, 1983 at p. 52, col 1. For a further discussion of software accounting see generally McGee, *Software Accounting Policy: Does it Matter?* 7 W. NEW ENG. L. REV. 705 (1985).

57. Financial Accounting Standards Board, *FASB Statement No. 3* (1974).

benefit has already occurred.⁵⁸

Expenses, on the other hand, have doubtful future economic benefit. From these criteria, the answer appears simple. Software that has probable future economic benefit should be recorded as an asset and amortized over its estimated economic life. Software with doubtful economic benefit should be expensed. Unfortunately, the answer is not quite that simple. Some accountants argue for capitalization⁵⁹ while others continue to argue for expense treatment.⁶⁰ Several articles have addressed the topic in recent years,⁶¹ and it appears that the issue will continue to be in the news for the next few years. The AICPA has formed a task force to study the issue,⁶² and the Securities and Exchange Commission has imposed a moratorium on the capitalization of certain software costs.⁶³

A. *The Controversy*

The controversy, simply stated, is whether software costs should be classified as assets or expensed. The question, however, is not merely philosophical. The choice can affect a company's earnings as well as its ability to raise capital. There are at least 4,000 companies in the United States that construct software for sale. Software expenditures for all such companies constitute a significant percentage of net

58. *Id.*

59. See Paulsen, *Software Development Costs Should Be Capitalized*, MANAGEMENT ACCOUNTING 40,40-42 (1983); see also McGee, *supra* note 56 at 706.

60. See Gannon & Parkinson, *Software Development Costs Should Be Expensed*, MANAGEMENT ACCOUNTING 37,39 (1983).

61. A sample of articles that address software accounting policy include Adams, *Programming Computer Software Into Financial Statements*, Going Concerns, Queens College Accounting Honor Society, October 19, 1983, at 4; Alex Brown & Sons, *Industry Accounting Concerns*, COMPUTER SERVICES MONTHLY (Aug., 1982); Burns & Peterson, *Accounting for Computer Software*, J. ACCT. 50,51,53-56,58 (April, 1982); *Expenses, Shmexpenses*, FORBES 13 (May 23, 1983); Fingleton, *Capital Offense*, FORBES 100,100-101 (Jan. 17, 1983); Fingleton, *U.S. Laws Hit Hi-Tech*, ACCOUNTANCY AGE 21 (April 21, 1983); Littrel, *Death of an Asset—The R & D Blood Bath*, MANAGEMENT ACCOUNTING 63 (Jan., 1981); McGee, *Accounting for Software—A Progress Report*, MANAGEMENT ACCOUNTING 38,66 (Jan., 1983); McGee, *Accounting for Software Costs Study Is Under Way*, ASSOCIATION LEADER 1,9 (Oct., 1983); McGee, *Software Accounting is New MAP Project*, ASSOCIATION LEADER 1,1-2 (Jan., 1983); Neal, *Caution for Lotus-Eaters*, FORBES, 52,54 (Sept. 26, 1983); Pridemore, *Software: Should Development Costs be Expensed or Capitalized?*, MANAGEMENT ACCOUNTING, 33,33-36 (Nov., 1983).

62. *Task Force of AcSec Studies Computer Software Accounting*, J. ACCT. 9 (June, 1983).

63. Securities and Exchange Commission, "Accounting for Costs of Internally Developing Computer Software for Sale or Lease to Others, 17 C.F.R. Parts 210 and 239; Release Nos. 33-6476; 34-20061; FR-12, File No. S7-968. Aug. 8, 1983. Published in the Federal Register Vol. 48, No. 157, Friday, Aug. 12, 1983, at 36566-36571.

income. Classifying software expenditures as assets or expenses can make the difference between making a profit or incurring a loss. One public company that reported a profit of \$2.2 million in 1981 would have had a loss of \$1 million that year if certain software expenditures had been expensed instead of capitalized. In 1982, the reported \$2.5 million profit would have been a \$4 million loss.⁶⁴ There is some evidence to suggest that accounting policy can affect expansion⁶⁵ and the ability to raise capital.⁶⁶ The interviews conducted in the course of this study and the questionnaire responses confirm this conclusion.

B. *The Catalyst*

If there is a single event responsible for the birth of the software accounting issue, it is the issuance by the Association of Data Processing Service Organizations (ADAPSO) of the Exposure Draft on software accounting⁶⁷ in April, 1982. This Exposure Draft detailed clear guidelines for accounting for software costs and revenues. Its issuance caused the AICPA to form a task force to study the issue.

V. AUTHOR'S VIEWS

Most software that is purchased or constructed internally does not fit within the definition of research and development. Most software is constructed from existing technology using existing coding methods. Any research and development occurs in the early stages prior to construction. Software is beyond the development stage when technological feasibility is established.

The interviews conducted in conjunction with this study and the questionnaire survey results indicate that many companies automatically assume that internally constructed software falls within the definition of research and development. Internally constructed software is

64. Fingleton, *Capital Offense*, FORBES 100,100-101 (Jan. 17, 1983); see also Fingleton, *U.S. Laws Hit Hi-Tech*, ACCOUNTANCY AGE 21 (April 21, 1983); *Expenses, Shmexpenses*, FORBES 10,13 (May 23, 1983).

65. See Horwitz & Kolodny, *Has the FASB Hurt Small High-Technology Companies?*, HARV. BUS. REV. 44,48-52, (1980); see also McGee *supra* note 56 at 706.

66. See R. MCGEE, *THE EFFECTS OF SOFTWARE ACCOUNTING POLICIES ON BANK LENDING DECISIONS AND STOCK PRICE* (1984); El-Arabi, "The Effects of Accounting Alternatives on Lending Decisions of Commercial Bankers," Ph.D. dissertation, The Louisiana State University and Agricultural and Mechanical College, 1977; El-Maksy, "A Theoretical and Empirical Investigation of the Effects of FASB Statement No. 33 on Lending Decisions," Ph.D. dissertation, City University of New York, 1983; Jain, "A Study of the Effects of Alternative Methods of Accounting for Income Taxes on Term Loan Decisions," Ph.D. dissertation, Michigan State University, 1970.

67. Association of Data Processing Service Organizations, "Accounting Guidelines for the Computer Services Industry," *Exposure Draft*, April, 1982.

therefore often expensed. It is the opinion of this author that such a view is incorrect. Each software project should be evaluated on its own merits and classified accordingly.

The accounting treatment for purchased software should mirror the accounting treatment for comparable internally constructed software. If a company plans to use a payroll program or accounts receivable program for the next five years, the cost of obtaining that program should be amortized over five years, regardless of whether the software was purchased or internally constructed.

The responses from the interviews and the questionnaire indicate that the present practice of most companies includes expensing internally constructed software and capitalizing purchased software. The usual reasons for this practice are that it is easier to determine the cost of purchased software, or that a purchased software product has a better chance of having future economic benefit because it has already been extensively tested and debugged. In this author's opinion, these reasons are insufficient. Merely because the cost of a purchased program is easier to determine is not sufficient reason to expense the costs of internally constructing comparable software. Once the feasibility of a project has been determined, the risk of failure is small enough to warrant capitalization treatment. Furthermore, the production costs of motion picture films and records are already being capitalized. The production process for software is similar in many ways to that of records and films.

The cost of internally constructed software can be broken down into the following six categories:

1. Feasibility costs, and other costs incurred prior to design costs in the software product life cycle;
2. design costs;
3. coding costs;
4. testing costs;
5. support costs; and
6. service costs.

In cases where the finished software product is expected to have future economic benefit, the costs that are incurred for designing, coding, and testing should be capitalized and amortized over the expected period of benefit. Pre-design costs, such as feasibility costs, should be expensed. Furthermore, service and support costs should be expensed because these costs have doubtful future economic benefit, and more nearly resemble period costs than capitalizable costs.

The straight-line method is an acceptable method of amortization

for intangible assets. This method can be used in cases where software is classified as intangible.

At least two other methods may also be considered for software that is developed for sale. The period-table-computation method, which is sometimes used to amortize motion picture film costs, can be used to amortize software intended for sale. This method amortizes software costs prepared from historic revenue patterns of a large group of previously marketed software products. Although that revenue pattern is assumed to provide a reasonable guide to the experience of succeeding groups of software products produced and distributed under similar conditions, these tables should not be used for a software product that is expected to have a significantly different revenue pattern from those products which were included in the table. The periodic tables should be reviewed regularly and updated whenever revenue patterns change significantly.

An acceptable alternative method of amortization is the individual-software-forecast-computation method, a variation of which is used to amortize motion picture film production costs. This method may be illustrated by the following examples:

Assume that a certain software product costs \$18,000,000 to develop and is expected to generate revenues of \$50,000,000 over its useful economic life. By the end of the second year, the amount of total anticipated revenues is reduced to \$30,000,000 due to lagging sales. Actual revenue received in each of the first three years is:

First year	\$10,000,000
Second year	\$ 6,000,000
Third year	\$ 5,000,000

Amortization in each of the first three years is computed as follows:

First year	\$10,000,000
Second year	\$ 6,000,000
Third year	\$ 5,000,000

Amortization in each of the first three years is computed as follows:

<u>First Year</u>		<u>Amount of Amortization</u>
$\$10,000,000 \times \$18,000,000$		
<hr/>	=	\$3,600,000
\$50,000,000		

Second Year

- Assuming change in anticipated total revenues
(a) from \$50,000,000 to \$30,000,000:

$$\begin{array}{rcl} \$ 6,000,000 \times \$ 14,440,000 & & \\ \hline & = & \$4,320,000 \\ \$20,000,000 & & \end{array}$$

Where:

- (1) \$6,000,000 is actual revenue in the second year;
- (2) \$20,000,000 is the adjusted total anticipated remaining revenue (\$30,000,000 — \$10,000,000);
and
- (3) \$14,400,000 is original cost (\$18,000,000)
less accumulated amortization (\$3,600,00)

- Assuming no change in anticipated total
(b) revenues:

$$\begin{array}{rcl} \$ 6,000,000 \times \$ 18,000,000 & & \\ \hline & = & \$2,160,000 \\ \$50,000,000 & & \end{array}$$

Third Year

- Assuming change in anticipated total revenues
(a) from \$50,000,000

$$\begin{array}{rcl} \$ 6,000,000 \times \$ 14,440,000 & & \\ \hline & = & \$4,320,000 \\ \$20,000,000 & & \end{array}$$

Where:

- (1) \$6,000,000 is actual revenue in the second year;
- (2) \$20,000,000 is the adjusted total anticipated remaining revenue (\$30,000,000 — \$10,000,000);
and
- (3) \$14,400,000 is original cost (\$18,000,000)
less accumulated amortization (\$3,600,00)

- Assuming no change in anticipated total
(b) revenues:

$$\begin{array}{rcl} \$ 6,000,000 \times \$ 18,000,000 & & \\ \hline & = & \$2,160,000 \\ \$50,000,000 & & \end{array}$$

Third Year

Assuming change in anticipated total revenues

- (a) from \$50,000,000 to \$30,000,000:

$$\begin{array}{rcl} \$ 5,000,000 \times \$14,440,000 & & \\ \hline & = & \$3,600,000 \\ \$20,000,000 & & \end{array}$$

The adjusted total anticipated remaining revenue (\$20,000,000) and adjusted cost (\$14,400,000) need not be reduced by the second year actual revenue (\$6,000,000), and second year amortization (\$4,320,000) respectively, because adjusted total anticipated remaining revenue (\$20,000,000) did not change from the second to third year. If the reduction were made, the result would not change.

$$\begin{array}{rcl} \$ 5,000,000 \times (\$14,440,000 - \$4,320,000) & & \\ \hline & = & \$3,600,000 \\ \$20,000,000 & & \\ - \$6,000,000 & & \end{array}$$

- (b) Assuming no change in anticipated total revenues:

$$\begin{array}{rcl} \$ 5,000,000 \times \$18,000,000 & & \\ \hline & = & \$1,800,000 \\ \$50,000,000 & & \end{array}$$

Although the individual-software-forecast-computation method and the period-table-computation method may be appropriate amortization methods in certain instances, they are not necessarily the only acceptable methods. Other methods that reasonably relate the amount of the revenue expected to be realized to the amount of capitalized expenditures are also acceptable.

Software costs meeting the definition of research and development should be expensed as incurred in keeping with *FASB Statement No. 2*. If the software has alternative future uses, however, it should be capitalized and amortized over the period of expected benefit. The alternative future use test does not apply to the internal development of computer software.⁶⁸

Software expenditures, if considered tangible property, should be classified as assets included in the "fixed assets" portion of the balance

68. See *FASB Interpretation No. 6*, paragraph 8, n.2.

sheet. Intangible software expenditures qualifying as assets should appear in the "other assets" section of the balance sheet.

Software expenditures should not be separately disclosed unless they are material in amount. Software expenses can be considered material if they equal or exceed five percent of sales. Software assets can be considered material if they equal or exceed five percent of total assets. Disclosure may be by footnote or by separately stating software expenditures in the body of the income statement or balance sheet.

When the possibility exists to acquire hardware and software "bundled" or "unbundled," the following factors should be considered:

A. Amortization

Software that might otherwise be expensed might be depreciated if combined with hardware costs. Likewise, software that would be capitalized if bundled might qualify for expense treatment if stated separately.

B. Investment Tax Credit

Software that would not otherwise qualify for the investment tax credit may so qualify if it is bundled with the related hardware. Even if software is acquired separately, the possibility of taking an investment tax credit should be examined. At least one court has held that the investment tax credit may be taken on unbundled software.

C. Sales/Use Tax

Bundling hardware and software may increase the amount of sales/use tax a buyer is required to pay. Some states do not tax the sale of software if sold separately from the hardware. Software delivered on cards, disk, or magnetic tape might be subject to tax in some states, even though the identical software, if delivered over telephone lines, would not be taxed.

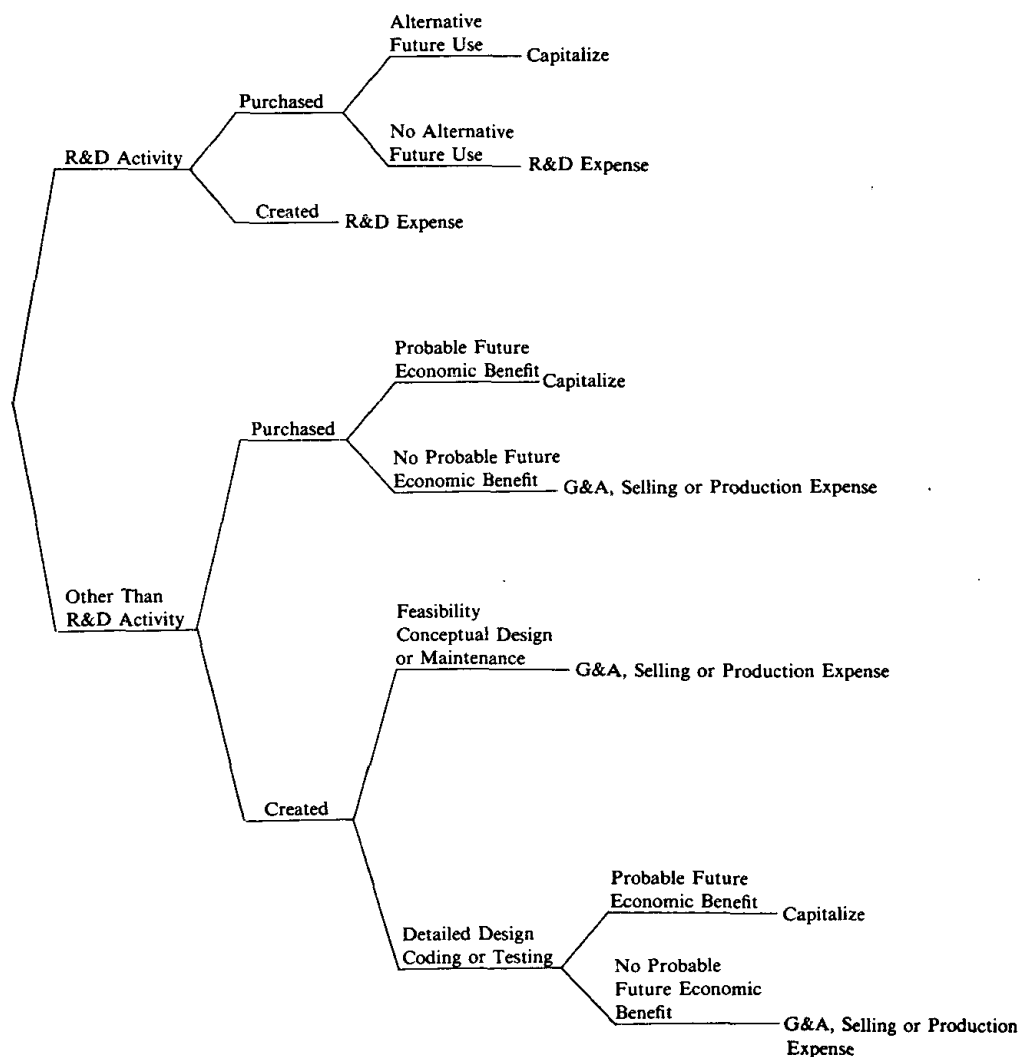
D. Property Tax

Bundling hardware and software may increase the amount of property tax the owner must pay. Many states levy a property tax on tangible property only. Software, if accounted separately from hardware, is often classified as intangible property.

E. *Different Accounting Treatments*

The accounting treatment for financial reporting need not be the same as that used for tax reporting. Software expenditures may be expensed as incurred for tax purposes and capitalized and amortized for financial reporting purposes and vice versa. If different methods are used, the tax effect of the difference is reflected in the deferred tax account.

ACCOUNTING FOR SOFTWARE



VI. STATE TAXATION OF COMPUTER SOFTWARE

A. *Tangibility*

Whether software is classified as tangible or intangible often de-

termines whether the software in question is subject to the state sales, use, or property tax. Software, if intangible, is generally exempt from tax. Many states place a tax on the sale, use, or ownership of tangible computer software. Some states treat "canned" programs as tangible property subject to tax, whereas "custom" programs are classified as intangible or as a service rather than a product.⁶⁹ As of late 1983, thirty-three states assessed a sales or use tax on prewritten programs and twenty states did so for custom programs.⁷⁰

Prior to 1972, no court had ruled on the tangibility or taxability of software, because software had always been sold in conjunction with hardware without any separate price being stated. Shortly after IBM "unbundled" in 1969, the price of software began to be stated separately from the hardware. Although computer hardware was clearly tangible and therefore subject to the sales, use, and property tax, the classification of software was less clear. The first case to address the tangibility of software was *District of Columbia v. Universal Computer Assocs.*⁷¹ In *Universal*, the Court held that the "canned" and "custom" programs in question were intangible and therefore not subject to the personal property tax,⁷² the rationale being that it was the intangible information contained on the cards that was being purchased, rather than the cards themselves. Once the information contained in the cards was transferred into the computer, all that remained was the knowledge, which is intangible.⁷³

Other courts have applied different tests to determine tangibility of software. The Texas Supreme Court, for instance, applied the "essence of the transaction" test, and held where the transaction is in essence the purchase of an intangible, such as a custom or canned pro-

69. Prewritten programs, also called "canned" or "off the shelf" programs, are standardized programs that are sold to many buyers "as is," without alteration. "Custom" programs are written to meet the needs of one particular customer and are often treated as the sale of a service rather than the sale of a product.

70. See PALENSKI, SALES AND USE TAX STATUS OF COMPUTER PROGRAMS BY STATE (1983).

71. 465 F.2d 615 (D.C. Cir. 1972).

72. *Id.* at 619.

73. This line of reasoning is called the "knowledge rationale." Other cases have relied on a similar line of reasoning to justify the classification of software as intangible. In a Tennessee case it was held that both systems and applications software are intangible in cases where the tangible medium used (card, tape, disk, etc.) is either returned to the seller or destroyed. The reasoning is that the property purchased is actually intangible knowledge, and the use of a tangible medium to transfer that intangible knowledge is "merely incidental to the purchase of the intangible knowledge and information stored on the tapes." *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 at 408 (Tenn. 1976). This line of reasoning is called the "personal service rationale." *Id.*

gram, the sale is exempt from the Texas sales tax which applies only to the sale of tangible property.⁷⁴

The "relative value" test has also been applied to software tax cases.⁷⁵ This test recognizes software creation to be a process involving both tangible and intangible elements. Most of the value of a software product is attributable to the intellectual content. The tangible medium used to store and transfer this knowledge represents mere incidental costs. Programs selling for \$100,000 might be stored on a tape or disk costing less than \$50. The purchaser of a program, therefore, actually purchases "knowledge," rather than a physical product.

The "mode of transmission" test has also been applied in several cases.⁷⁶ This test holds that the sale in question is the sale of intangible property where the knowledge can be conveyed from the seller to the buyer without the use of a physical medium such as a card, tape, or disk. Computer programs can be transferred directly to the buyer's computer over telephone lines or by satellite.

B. *Case Law in Related Areas*

Prior to 1972, there were no precedents for courts to consider with respect to software taxation. Analogies were drawn, therefore, between software and other types of property. Several courts have analogized software programs to films and phonograph records.⁷⁷

74. *First Nat'l Bank of Fort Worth v. Bullock*, 584 S.W.2d 548 (Tex. Civ. App. 1979).

75. *See James v. TRES Computer Sys., Inc.*, 642 S.W.2d 347 (Mo. banc 1982). *James* cites *District of Columbia v. Universal Computer Assocs.*, 465 F.2d 615 (D.C. Cir. 1972) and *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976) as two cases that employed this rationale. *James*, 642 S.W.2d at 349.

76. *See District of Columbia v. Universal Computer Assocs.*, 465 F.2d 615 (D.C. Cir. 1972); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976); *First Nat'l Bank of Fort Worth v. Bullock*, 584 S.W.2d (Tex. Civ. App. 1979); *State of Ala. v. Central Computer Servs., Inc.*, 349 So.2d 1160 (Ala. 1977). These cases are discussed in some detail in *James*, 642 S.W.2d at 348-50.

77. *See Chittenden Trust Co. v. King*, 143 Vt. 271, 465 A.2d 1100 (1983); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976); *Comptroller of the Treasury v. Equitable Trust Co.*, 296 Md. 459, 464 A.2d 248 (1983); *First Nat'l Bank of Springfield v. Department of Revenue*, 85 Ill.2d 84, 421 N.E.2d 175 (1981); *Greyhound Computer Corp. v. State Dep't of Assessments and Tax'n*, 271 Md. 674, 320 A.2d 52 (1974); *James v. TRES Computer Serv., Inc.*, 642 S.W.2d 347 (Mo. banc 1982).

For cases involving the tangibility of films and records for sales, use, and property tax purposes, see *Recording Devices Co. v. Bowers*, 174 Ohio St. 518, 190 N.E.2d 258 (1963); *Recording Devices Co. v. Porterfield*, 30 Ohio St.2d 208, 283 N.E.2d 626 (1972); *Michael Todd Co. v. County of Los Angeles* 57 Cal.2d 684, 21 Cal. Rptr. 604, 371 P.2d 340 (1962); *University Microfilms v. Scio Township*, 76 Mich. App. 616, 257 N.W.2d 265 (1977), *leave to appeal denied*, 402 Mich. 880 (1978); *Boswell v. Paramount Television Sales, Inc.*, 291 Ala. 490, 282 So.2d 892 (1973); *Crescent Amusement Co. v. Carson*, 187 Tenn. 112, 213

Computer software has much in common with films and records, but several distinctions can be made as well. Most of the value of a film or record is attributable to the intellectual and artistic content rather than the celluloid, plastic, or paper upon which that content is recorded.⁷⁸ The plastic or celluloid upon which the record or film is recorded is a crucial element.⁷⁹ Without the plastic there could be no record, without the film there could be no movie. Cards, tape, and disks, however, are not necessary to store a computer program and can be transferred to another physical location by telephone line or satellite.

Another distinction that can be made between film and software is that the medium upon which the computer program is recorded can be returned to the seller or destroyed after the program has been run through the computer. Movie film, on the other hand, has continuing value after the movie has been shown, it can be used again and again.⁸⁰ A similar analogy can be made to phonograph records.⁸¹

A third distinction drawn between software and films and records is that the latter items can be used immediately upon purchase, whereas software must first be translated into a language that can be understood by the computer.⁸² Furthermore, films and records are immediately perceptible to the senses, whereas software, in essence, is not.⁸³

A fourth distinction that has been made between software and films and records is that the software sales or licensing agreement often includes periodic updating by the seller. Films and records, on the other hand, are not updated after the sale.⁸⁴ This distinction, how-

S.W.2d 27 (1948); *United Artists Corp. v. Taylor*, 273 N.Y. 334, 7 N.E.2d 254 (1937); *Saenger Realty Corp. v. Grosjean*, 194 La. 470, 193 So. 710, *cert. denied*, 310 U.S. 613 (1940); *J.A. Burgess Co. v. Ames*, 359 Ill. 427, 194 N.E. 565 (1935); *District of Columbia v. Norwood Studios, Inc.*, 336 F.2d 746 (D.C. Cir. 1964); *Simplicity Pattern Co., Inc. v. State Bd. of Equalization*, 101 Cal. App.3d 184, 161 Cal. Rptr. 558, 615 P.2d 555 (1980).

78. Films, records, and books are generally treated as tangible property for sales tax purposes. See *supra* note 41 and accompanying text.

79. See Heinzman, *Computer Software: Should It Be Treated As Tangible Property For Ad Valorem Tax?*, 37 J. TAX'N 184,185 (1972); Bryant & Mather, *Property Taxation of Computer Software* 18 N.Y.L.F. 58,74 (1972).

80. See *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615,617-18 (D.C. Cir. 1972); *Commerce Union Bank v. Tidwell*, 538 S.W. 2d 405,408 (Tenn. 1976).

81. 538 S.W.2d at 408.

82. See *Alabama v. Central Computer Servs., Inc.*, 349 So.2d 1160,1162 (Ala. 1977); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405,408 (Tenn. 1976).

83. See Case, *Sales and Use Tax of Computer Software—Is Software Tangible personal Property?*, 27 WAYNE L. REV. 1503,1518 (1981).

84. Bryant & Mather, *Property Taxation of Computer Software*, 18 N.Y.L.F. 59,74

ever, does not apply to the many programs that are not updated after sale.

Courts have also considered the issue of whether the sale of computer software constitutes the sale of a product or a personal service. This issue is frequently raised in service bureau cases,⁸⁵ although analogies to the Uniform Commercial Code⁸⁶ and the sale of information⁸⁷ have also been proffered. Generally, if software is viewed as a product or good, it is tangible property subject to sales, use, and property taxation. If viewed as a service, however, software is intangible and not subject to these taxes. Canned programs are more likely to be viewed as products than are custom programs, which involve more personal service.

Software often involves elements of both sales and services, and courts have developed several tests to aid the development of this distinction. One test is whether the transfer of property is necessary or merely convenient in order to achieve the primary purpose of the

(1972), *reprinted in abbreviated form in* THE MONTHLY DIGEST OF TAX ARTICLES, 31-40 (March, 1983).

85. See *Intellidata, Inc. v. State Bd. of Equalization*, 139 Cal. App.3d 594, 188 Cal. Rptr. 850 (1983); *Nova Computing Servs., Inc. v. Askew*, Florida Div. of Admin. Hearings, No.76-1475 (1976); *Credit Bureau of Miami County, Inc. v. Collins*, 50 Ohio St.2d 270, 364 N.E.2d 27 (1977); *Miami Citizens Nat'l Bank v. Lindley*, 50 Ohio St.2d 249, 364 N.E.2d 25 (1977); *Citizens Financial Corp. v. Kosydar*, 43 Ohio St.2d 148, 331 N.E.2d 435 (1975); *Accountants Computer Servs., Inc. v. Kosydar*; *Central Data sys., Inc. v. Kosydar*; *Jergens Co. v. Kosydar*, all reported at 35 Ohio St.2d 120, 298 N.E.2d 519 (Ohio 1973); *Janesville Data Center, Inc. v. Wisconsin Dep't of Revenue*, 84 Wis.2d 341, 267 N.W.2d 656 (1978).

86. The Uniform Commercial Code distinguishes the sale of "goods" from the sale of "services." For UCC cases that have been cited in cases addressing the issue of software taxation, see *Triangle Underwriters, Inc. v. Honeywell, Inc.*, 457 F. Supp. 765, (E.D.N.Y. 1978), *rev'd on other grounds*, 604 F.2d 737 (2d Cir. 1979); *F & M Schaefer Corp. v. Electronic Data Sys. Corp.*, 430 F. Supp. 988 (S.D.N.Y. 1977), *aff'd mem.*, 614 F.2d 1286 (2d Cir. 1979); *Carl Beasley Ford, Inc. v. Burroughs Corp.*, 361 F. Supp. 325 (E.D. Pa. 1973), *aff'd mem.*, 493 F.2d 1400 (3d Cir. 1973); *Helvey v. Wabash County REMC*, 151 Ind. App. 176, 278 N.E.2d 608 (1972).

87. For cases involving the sale of mailing lists, see *Fingerhut Prod Co. v. Commissioner of Revenue*, 258 N.W.2d 606 (Minn. 1977); *Spencer Gifts, Inc. v. Director, Division of Tax'n*, 182 N.J. Super. 179, 440 A.2d 104 (1981); *Mertz v. State Tax Comm'n*, 89 A.D.2d 396, 456 N.Y.S.2d 501 (1982). For cases involving the sale of stock exchange information, see *Quotron Sys. v. Comptroller*, 287 Md. 178, 411 A.2d 439 (1980); *Dun & Bradstreet v. City of New York*, 276 N.Y. 198, 11 N.E.2d 728 (1937); *Bunker-Ramo Corp. v. Porterfield*, 21 Ohio St.2d 231, 257 N.E.2d 365 (1970). For other cases addressing the product versus service, see *Washington Times-Herald v. District of Columbia*, 213 F.2d 23 (D.C. Cir. 1954)(artwork); *Southern Bell Telephone and Telegraph Co. v. Department of Revenue*, 366 S.2d 30 (Fla. Dist. Ct. App. 1978)(artwork); *Credit Bureau of Miami County, Inc. v. Collins*, 50 Ohio St.2d 270, 364 N.E.2d 27 (1977)(credit information); *General Data Corp. v. Porterfield*, 21 Ohio St.2d 233, 257 N.E.2d 359 (1970)(hotel reservation information).

transaction.⁸⁸ Another test is whether the value of the materials is small compared to the value of the services.⁸⁹ A third test is whether the item transferred has value only to the purchaser (as is the case when a custom program is acquired), or whether the item can be sold to the general public (as is the case with canned programs).⁹⁰

In the case of canned programs, no services are performed. Canned programs are sold "off the shelf," and are available to the public-at-large. They are conveyed to the purchaser on a tangible property such as a card, tape, or disk. The tangible medium is merely incidental to the transaction. In contrast, custom programs are designed for a particular customer and are of no value to the general public. The value of the tangible medium is slight, compared to the value of the services required to write the custom program.

C. Software Tax Cases

The first case to directly address the software tangibility issue was *District of Columbia v. Universal Computer Assocs.*,⁹¹ which held that software was intangible and therefore not subject to the personal property tax. The following year, the California court held that software is intangible and therefore not subject to the sales tax.⁹² In another early case,⁹³ Greyhound Computer Corporation purchased several computer systems in which the price of the hardware and software were not separately stated. The Maryland Department of Assessments and Taxation treated the cost of the software as inseparable from that of the hardware and based its property tax assessment on aggregate purchase price, less depreciation, without allocating the cost of the software package between tangible property acquired and services to

88. *Bigsby v. Johnson*, 99 P.2d 268 (1940), *rev'd. on other grounds*, 18 Cal.2d 860, 118 P.2d 289 (1941); *Howitt v. Street & Smith Publications, Inc.*, 276 N.Y. 345, 12 N.E.2d 435 (1938). See also *Case, Sales and Use Tax of Computer Software — Is Software Tangible Personal Property?*, 27 WAYNE LAW REV. 1520 (1981).

89. *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615 (D.C. Cir. 1972); *Mahon v. Nudelman*, 377 Ill. 331, 36 N.E.2d 550 (1941); *Community Telecasting Serv. v. Johnson*, 220 A.2d 500 (Me. 1966); *Barry-Kofron Dental Lab. Co. v. Smith*, 345 Mo. 922, 137 S.W.2d 452 (1940); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976).

90. *United Aircraft Corp. v. O'Connor*, 141 Conn. 530, 107 A.2d 398 (1954); *Bucyrus-Erie Co. v. Lorenz*, 26 Ill.2d 183, 186 N.E.2d 250 (1962); *University Microfilms v. Scio Township*, 76 Mich. App. 616, 257 N.W.2d 265 (1977), *leave to appeal denied*, 402 Mich. 880 (1978).

91. 465 F.2d 615 (D.C. Cir. 1972). See *supra* notes 71-73 and accompanying text.

92. *County of Sacramento v. Assessment App. Bd.*, 32 Cal. App.3d 654, 671, 108 Cal. Rptr. 434, 446 (1973).

93. *Greyhound Computer Corp. v. State Dep't of Assessments and Tax'n*, 271 Md. 674, 320 A.2d 52 (1974).

be rendered. The Court of Appeals of Maryland held that it was error not to allocate the purchase price between the tangible and intangible components. The court remanded the case for further proceedings.⁹⁴

In *Commerce Union Bank v. Tidwell*,⁹⁵ the Supreme Court of Tennessee held that the sale of software is the sale of information, and that the magnetic tapes that contain this information are only a method of transmitting these intellectual creations from the source to the user. The court concluded further that it is merely incidental that these intangibles are transmitted by way of a tangible reel of tape that is not even retained by the user. Tennessee did not attempt to tax computer programs purchased by the bank which were transmitted to its computers from outside the state by way of telephone lines. That method was deemed to constitute the purchase of intangible personal property.⁹⁶ The court stated "the principle is the same, only the method of transmitting the information is different."⁹⁷

The year after *Tidwell* was decided in Tennessee, the Alabama Supreme Court reached a similar conclusion in a similar case. In *State of Ala. v. Central Computer Servs., Inc.*,⁹⁸ Central Computer Services licensed certain software programs for a ninety-nine year term. Upon receipt of the software, Central extracted the information contained on the magnetic tapes and punched cards, and transferred the programs to magnetic discs. The tapes were then returned to the lessor and the cards were discarded. The Alabama State Department of Revenue assessed a use tax of \$13,519.91 against Central for its purchase of the programs. Central alleged the programs were intangible property and, therefore, not subject to the use tax. Holding for Central, the court ruled that Central purchased the information or knowledge which went into the development of the eight programs. It did, however, also purchase tapes and punched cards. The magnetic tapes and punched cards were merely the means by which this information or

94. *Id.* at 682, 320 A.2d at 57. For analogies to the film-making industry, the court cited *Michael Todd Co. v. County of Los Angeles*, 57 Cal. Rptr. 604, 371 P.2d 340 (1962) and *District of Columbia v. Norwood Studios, Inc.*, 336 F.2d 746 (1964). This analogy was challenged in *Heinzman, Computer Software: Should It Be Treated As Tangible Property For Ad Valorem Tax?*, 37 J. TAX'N 184,185-87 (1972).

95. 538 S.W.2d 405 (Tenn. 1976). The result in *Tidwell* has since been changed by statute. See TENN. CODE ANN. § 67-6-203 (1983).

96. *Tidwell*, 538 S.W.2d at 408.

97. *Id.*

98. 349 So.2d 1160 (1977). This case was a case of first impression in Alabama. The court's decision was influenced by *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976) and *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615 (1972).

knowledge was transferred.⁹⁹ The state cited *Boswell v. Paramount Television Sales, Inc.*¹⁰⁰ In *Boswell*, the court held that the leasing of movie films and tapes by Paramount to television stations in Alabama involved the leasing of tangible personal property rather than an intangible right to publish as Paramount argued. In *Central*, the court distinguished the magnetic tapes and punched cards from the movie films. In *Boswell*, the court noted that the right to publish or broadcast the motion picture was physically inseparable from the movie film itself. The physical presence of the movie film is essential to broadcasting the intangible artistic efforts of the actors.

In *Central*, however, the physical presence of magnetic tapes and punched cards was not essential to the transmittal of the desired information from its creator to Central. This information could be telephoned to the computer or brought into Alabama in the mind of an employee of the lessor.

In its summary, the court stated:

[W]e find in the present case that there is an incidental physical commingling of the intangible information sought by Central Computer Services and the tangible magnetic tapes and punched cards themselves. We therefore hold that the essence of this transaction was the purchase of nontaxable intangible information.¹⁰¹

Texas, which first addressed the software tax issue in 1977 in *Bullock v. Statistical Tabulating Corp.*,¹⁰² addressed the issue a second time in 1979 in *First Nat'l Bank of Fort Worth v. Bullock*.¹⁰³ In the latter case, the bank purchased several standardized or "canned" programs which enabled its computer to perform deposit and lending functions and process general accounting. The software was contained on magnetic tapes, but the information could have been transmitted by keypunch cards, telephone, or various other methods.

The Texas law places a tax on a sale of tangible personal property. Tangible personal property is defined as "personal property that may be seen, weighed, measured, felt or otherwise perceived by the senses."¹⁰⁴ According to the Texas Civil Court of Appeals, the courts apply the "essence of the transaction" test to determine whether a sale

99. 349 So.2d at 1162.

100. 291 Ala. 490, 282 So.2d 892 (1973).

101. 349 So.2d at 1162. Alabama Rule C28-001 presently exempts both prewritten and custom programs from sales and use taxation.

102. 549 S.W.2d 166 (Tex. 1977).

103. 584 S.W.2d 548 (Tex. Civ. App. 1979).

104. TEX. TAX CODE ANN. § 1.104 (5) (Vernon 1983).

is of tangible or intangible property.¹⁰⁵ "If the object or essence of the sale is intangible property, the transaction is not taxable."¹⁰⁶ Therefore, an important factor to consider in arriving at this determination is the fact that the desired information could have been transferred by several different means.¹⁰⁷

The *Fort Worth* court offered the following analysis of two cases in which data was held not taxable.

In *Statistical Tabulating*, the Court held that processed data contained [on] a coded computer card was an intangible and, [therefore,] not taxable. In *Williams and Lee Scouting*, statistical data on oil and gas well production was compiled and mailed to subscribers in printed reports each week. The sale was not taxed. The purchasers in both *Williams and Lee Scouting* and *Statistical Tabulating* [desired] something beyond the tangible object involved in the transaction.¹⁰⁸

The court compared computer cards to "a phonograph record or film-strip [in which] the information is [contained on] tape," and concluded that the transfer in *Fort Worth* involved a transfer to the computer. The tape was no longer valuable or important to the user.¹⁰⁹

Bullock contended that *Fort Worth* is distinguishable from *Statistical Tabulating* in that the software in the latter case was "customized" because it was developed specially for the purchaser.¹¹⁰ The tapes in *Fort Worth* were "standard items sold to numerous customers with only slight modifications to conform to each purchaser's use."¹¹¹ The service characteristic, according to Bullock, "is present only with 'customized' programs."¹¹²

The court did not accept Bullock's argument that only "customized" programs should be exempt from the sales tax.¹¹³ The court then concluded that the "test in each case is not whether the product

105. First Nat'l Bank of Fort Worth v. Bullock, 584 S.W.2d 548,550 (Tex. Civ. App. 1979) (citing Bullock v. Statistical Tabulating Corp., 549 S.W.2d 166 (Tex. 1977)).

106. *Fort Worth*, 584 S.W.2d at 550.

107. *Id.*

108. *Id.* The tangible objects involved consisted of the computer cards and the paper used in the printed reports. The purchasers purchased the information contained on the computer cards and in the printed reports. The value of the material used in the computer cards and the paper used in the printed reports was incidental.

109. *Id.* (citing State of Alabama v. Central Computer Services, Inc., 349 So.2d 1160 (Ala. 1977); Commerce Union Bank v. Tidwell, 538 S.W.2d 405 (Tenn. 1976)).

110. *Fort Worth*, 584 S.W.2d at 550 (comparing *Statistical Tabulating*, 549 S.W.2d at 166).

111. *Id.*

112. *Id.*

113. *Id.*

is 'customized' or 'canned,' but whether the object of the sale is tangible personal property."¹¹⁴ "In *Williams and Lee Scouting*, the weekly report of oil and gas data was a 'canned' publication in that the same information was mailed to many subscribers."¹¹⁵ The Texas court held that the programs in question were intangible and not subject to the sales tax.¹¹⁶

Two years after *Bullock* was decided in Texas, the Illinois Supreme Court heard a similar case and reached the same conclusion reached by the Texas court. In *First Nat'l Bank of Springfield v. Department of Revenue*,¹¹⁷ the issue was whether the sale of applicational programs (as opposed to operational programs), where the data is contained on magnetic tape, constituted the sale of tangible personal property subject to the Illinois use tax.¹¹⁸ First National Bank purchased computer "programs [that] were delivered on magnetic tape,"¹¹⁹ although other means of delivery were feasible. Upon delivery, "the information was removed from the tapes and stored elsewhere, [at which point] the tapes could either be used again or discarded."¹²⁰

The bank contended that "the magnetic tapes in question constituted intangible personal property, because they were, in essence, merely a means of conveying programming instructions."¹²¹ Furthermore, the software primarily represents intangible services rather than tangible goods.¹²² According to the court, the Department contended

that the physical qualities of the tapes predominate over the information contained [therein]. The Department compare[d] the tapes to films, phonograph records and books. All three examples, the Department argue[d], represent the physical manifestation of intangible ideas and artistic achievement, yet all were taxable as tangible personal property.¹²³

The Illinois court held that the software in question was intangi-

114. *Fort Worth*, 584 S.W.2d at 550 (citing *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615 (D.C. Cir. 1972); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976)).

115. *Fort Worth*, 584 S.W.2d at 551 (discussing *Williams and Lee Scouting*, 452 S.W.2d at 789).

116. *Williams and Lee Scouting*, 452 S.W.2d at 792.

117. 85 Ill.2d 84, 421 N.E.2d 175 (1981).

118. *Id.* at 86-87, 421 N.E.2d at 176-77.

119. *Id.* at 87, 421 N.E.2d at 177.

120. *Id.* at 87, 421 N.E.2d at 177.

121. *Id.* at 87-88, 421 N.E.2d at 177.

122. *Id.* at 88, 421 N.E.2d at 177.

123. *Id.* In its argument, the Department cited *Time, Inc. v. Hulman*, 31 Ill.2d 344, 201 N.E.2d 374 (1964), in which the Illinois court decided that magazines are tangible personal property and that the proceeds from their sale would be subject to the retailers'

ble.¹²⁴ It held previously "that where a service of skill was rendered in the manufacture of a special milling machine for the particular and exclusive use of a purchaser, the sale of the product was not taxable where it was merely incidental to the service."¹²⁵ *First Nat'l Bank* involved a similar issue:¹²⁶

The plaintiff bank purchased, in substance, the means of programming its computer so that it could perform [necessary banking functions]. The bank did not desire to spend the money or time to formulate the programs through its own data processing staff. Therefore it purchased instruction programs from other sources. It simply happened that, for the sake of convenience and easy handling, the programs were recorded on magnetic tapes. The tapes were certainly not the only medium through which the information could be transferred. In this way, the tapes differ from a movie film, a phonograph record or a book, [because in the latter] the media used [is] the only practicable [way to preserve] those articles.¹²⁷

While film, records, and books are similar to the magnetic tape "in that they physically represent the transfer of ideas or artistic processes," there exists a significant distinction.¹²⁸ Film, records, and books "are inseparable from the ideas or processes expressed, [whereas] computer programs are separable from the tapes."¹²⁹ Software information can be conveyed in numerous ways.¹³⁰ It may even be copied from off the tapes and stored on another medium.¹³¹ Therefore, "it is not the tapes which are the substance of the transaction, it is the information."¹³²

The court held "that the sale of computer software in [this instance] is, in substance, the transfer of intangible personal property, and as such, it is not taxable under the Illinois Use Tax Act."¹³³

occupation tax were it not for an exclusion afforded to newspapers and other materials "such as newsprint." *Id.*

124. *Id.* at 91, 421 N.E.2d at 179.

125. *Ingersoll Milling Machine Co. v. Department of Revenue*, 405 Ill. 367, 90 N.E.2d 747 (1950).

126. *First Nat'l Bank of Springfield*, 85 Ill.2d at 91, 421 N.E.2d at 179.

127. *Id.* at 90-91, 421 N.E.2d at 178.

128. *Id.* at 91, 421 N.E.2d at 789 (citing Bryant & Mather, *Property Taxation of Computer Software*, 18 N.Y.L.F. 59,59-67 (1972); reprinted in THE MONTHLY DIGEST OF TAX ARTICLES, March, 1973, at 31-40).

129. *First Nat'l Bank of Springfield*, 85 Ill.2d at 91, 421 N.E.2d at 789.

130. *Id.*

131. *Id.*

132. *Id.*

133. *Id.* at 91-92, 421 N.E.2d at 789 (citing *First National Bank v. Bullock*, 584 S.W.2d 548,551 (Tex. Civ. App. 1979); *Janesville Data Center, Inc. v. Wisconsin Dep't of*

Soon after the *First Nat'l Bank of Springfield* case was decided in Illinois, a case having a similar fact pattern was heard across the border in Missouri. In *James v. TRES Computer Sys., Inc.*,¹³⁴ the issue was whether the sale of "canned" software is a taxable event. In holding software to be intangible and not subject to the Missouri use tax, the court based its decision on the decisions reached in Alabama, Tennessee, Texas, Illinois, the District of Columbia, and Wisconsin.¹³⁵

D. 1983: A Turning Point or an Aberration?

In a long line of cases since 1972, a number of states have ruled almost uniformly that software is intangible for state sales, use, and property tax purposes. The "knowledge" rationale has been applied along with the "essence of the transaction" and several other tests. Software has been compared to and distinguished from films, records, and books, all of which have been held to be tangible. In 1983, two court cases, *Comptroller of the Treasury v. Equitable Trust Co.*¹³⁶ and *Chittenden Trust Co. v. King*,¹³⁷ decided one day apart, disregarded this long line of precedent.

In *Equitable Trust Co.*, the issue was whether the purchase of a "canned" or "off the shelf" program on magnetic tape constituted a transaction upon which a sales tax could be assessed.¹³⁸ Equitable entered into several license agreements whereby it obtained the nontrans-

Revenue, 84 Wis.2d 341,347, 287 N.W.2d 656,659 (1978); *Honeywell Info. Sys., Inc. v. Maricopa County*, 118 Ariz. 171,173, 575 P.2d 801,803 (1978); *State v. Central Computer Servs., Inc.*, 349 So.2d 1160,1162 (Ala. 1977); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405,408 (Tenn. 1976); *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615,618 (D.C. Cir. 1972); *County of Sacramento v. Assessment Appeals Bd. No. 2*, 32 Cal. App.3d 654,670-71, 108 Cal. Rptr. 434,446 (1973)); CAL. REV. & TAX CODE §§ 995 and 995.2 (West. Supp. 1974) (subjects operational software to property taxation, but exempts applicational software). See also *Greyhound Computer Corp. v. State Dep't of Assessments and Tax'n*, 271 Md. 674, 320 A.2d 52 (1974)(only so much of software as consists of services is intangible and not taxable).

134. 642 S.W.2d 347 (Mo. 1982).

135. See *James*, 642 S.W.2d at 348-51 for a discussion of the following state cases: *State of Alabama v. Central Computer Servs., Inc.*, 349 So.2d 1160 (Ala. 1977); *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976); *Bullock v. Statistical Tabulating Corp.*, 549 S.W.2d 166 (Tex. 1977); *First Nat'l Bank of Fort Worth v. Bullock*, 584 S.W.2d 548 (Tex. Civ. App. 1979); *First Nat'l Bank of Springfield v. Department of Revenue*, 85 Ill.2d 84, 51 Ill. Dec. 667, 421 N.W.2d 175 (1981); *District of Columbia v. Universal Computer Assocs., Inc.*, 465 F.2d 615 (D.C. Cir. 1972); *Janesville Data Center, Inc. v. Wisconsin Dep't of Revenue*, 84 Wis.2d 341, 267 N.W.2d 656 (1978).

136. 296 Md. 459, 464 A.2d 248 (1983).

137. 143 Vt. 271, 465 A.2d 1100 (1983).

138. *Equitable*, 296 Md. at 460, 464 A.2d at 249.

ferable and nonexclusive right to use several programs in perpetuity. Legal title remained with the licensor.

The Comptroller alleged that these transactions constituted transactions involving tangible personal property (magnetic tapes which had been enhanced in value by the copies of the programs coded thereon) and are subject to sales tax. In its amicus brief, the Data Processing Management Association (DPMA) contended that the transactions were licenses to use the programs. DPMA suggested that such licenses are a form of intangible property. Equitable contended that the predominant purpose or essence of the transaction governed classification of the sale as involving either tangible or intangible property. The purpose in the transfer of computer programs via magnetic tape is to obtain the intangible program, rather than the tangible tape. Assuming its position, Equitable supported itself with an overwhelming numerical majority of reported cases which applied tax statutes restricted to tangible personal property.¹³⁹

Holding for the Comptroller, the court concluded that Equitable acquired tangible personal property (magnetic tapes), which had been enhanced in value by the copies of the programs coded thereon. Furthermore, it concluded the licenses did not grant intangible rights from the proprietors to Equitable. They simply erected contractual limitations on the use which Equitable might otherwise have made of the statutorily unprotected program copies it acquired.¹⁴⁰

Equitable's principal argument as detailed by the Court of Appeals of Maryland, was that the court should conceptually sever the program copy contained on the magnetic tape from the tangible tape itself.¹⁴¹ The above argument is premised on the assumption that the transaction should be viewed on two operational levels.¹⁴² First, the transfer of intangible knowledge or information.¹⁴³ Second, the delivery of a tangible tape.¹⁴⁴ This "legal surgery"¹⁴⁵ requires Maryland, as part of its sales tax law, to adopt the principle that the buyer's predominant purpose for a transaction controls the classification of the acquisition as either tangible or intangible.¹⁴⁶

139. *Id.* at 466, 464 A.2d at 252.

140. *Id.* at 468, 464 A.2d at 253.

141. *Id.*

142. *Id.*

143. *Id.*

144. *Id.*

145. *Id.* The Court of Appeals of Maryland elaborated on this colorful metaphor. It suggested the need for a "scalpel" to complete this "legal surgery." *Id.*

146. *Id.*

In its analysis, the *Equitable* court considered *Quotron Sys. v. Comptroller*.¹⁴⁷ In *Quotron*, the court recognized a predominant purpose test as one of several factors in determining use tax applicability to the type of transaction presented.¹⁴⁸ Quotron Systems undertook concurrently to render two types of interrelated performances.¹⁴⁹ One was to maintain and to continuously update a computerized data bank of economic information.¹⁵⁰ The other was to install Quotron-owned hardware, including the remote terminals, on its customers' premises for its use in requesting and receiving electronic transmissions of the economic data. In *Quotron*, the court held that the first analytical step was to characterize the performance as a single, overall function as either the rental of equipment or the provision of services.¹⁵¹ The dominant purpose was to obtain services and not to rent hardware. Based on that factor, on the taxpayer's retention of control over the hardware, and on the fact that Quotron's hardware could not be obtained without subscribing to the service, the court concluded that the transaction was the provision of services.¹⁵² The *Equitable* court recognized that this approach was quite similar to the approach it used to determine whether a contract of sale was one for goods or for services under Article 2 of the Uniform Commercial Code, where the performance involved elements of both.¹⁵³

The rule in *Quotron* was applied implicitly to an undisputed aspect of *Equitable*.¹⁵⁴ In addition to providing program copies on tape, each licensor agreed to furnish certain installation services.¹⁵⁵ One licensor also contracted to furnish a limited amount of training within the fixed contract price.¹⁵⁶

The "dominant purpose" test of whether the property in question is being purchased for its own sake or for the intangible information contained therein can also be applied, according to the *Equitable*

147. *Id.* (citing *Quotron Sys. v. Comptroller*, 287 Md. 178, 411 A.2d 439 (1980)).

148. *Equitable*, 296 Md. at 468-69, 464 A.2d at 253.

149. *Id.*

150. *Id.* The economic information maintained in the computerized data bank included the selling price of securities which its customers could randomly access through remote terminals. *Id.*

151. *Id.* at 469, 464 A.2d at 253.

152. *Id.*

153. *Id.* (citing *Anthony Pools v. Sheehan*, 295 Md. 285, 455 A.2d 434 (1983); *Burton v. Artery Co.*, 279 Md. 94, 367 A.2d 935 (1977)). "*Quotron* did not say that the dominant purpose of obtaining data made the subject of the contract intangible because information is intangible." *Equitable*, 269 Md. at 469, 464 A.2d at 253. .

154. *Equitable*, 269 Md. at 469, 464 A.2d at 253.

155. *Id.*

156. *Id.*

court, by analogy to books, motion picture films, video display discs, phonorecords, and music tapes.¹⁵⁷ The consumer's dominant purpose in purchasing these items is ordinarily to obtain the knowledge, information, or data thereby conveyed.¹⁵⁸ Books are generally contained in a human readable form, while the other media are strictly machine readable.¹⁵⁹ A purchase of any of these information conveying media is within the imposition of the sales tax as tangible personal property.¹⁶⁰ Such transactions escape taxation only if there is an applicable statutory exclusion or exemption.¹⁶¹ These analogies, however, have been argued to other courts which have held that tape copies of programs are intangible.¹⁶²

In *Equitable*, the court rejected the rationale behind the long line of cases that held taped copies to be intangible.¹⁶³ This rejection, it explained, stemmed from alleged "misconceptions in the technological underpinnings" of these decisions, and from the "apparent departures in reasoning from that usually applied in sales tax cases."¹⁶⁴ Second, the court questioned whether *District of Columbia v. Universal Computer Assoc., Inc.*¹⁶⁵ was consistent with Maryland law.¹⁶⁶

Furthermore, the *Equitable* court concluded a "tape containing a copy of a canned program does not lose its tangible character because its content is a reproduction of the product of intellectual effort" which is placed on the tangible tape, similar to that of a phonorecord.¹⁶⁷ A phonorecord does not become intangible merely because it is a reproduction of the product of artistic effort.¹⁶⁸ "The price paid for a copy of a canned program reflects the cost of developing the program."¹⁶⁹ The proprietor hopes to recover such costs, with profit, by spreading its costs among its customers.¹⁷⁰ The program tape is not made less tangible merely because the canned program

157. *Id.* at 470, 464 A.2d at 254.

158. *Id.*

159. *Id.*

160. *Id.*

161. *Id.*

162. *Id.*

163. *Id.* at 481, 464 A.2d at 259.

164. *Id.*

165. 465 F.2d 615 (D.C. Cir. 1972). *Universal Computer Assoc.* established the first decision in a line of program-labeling precedent. *Id.*

166. *Equitable*, 296 Md. at 481, 464 A.2d at 259.

167. *Id.* at 484, 464 A.2d at 261.

168. *Id.*

169. *Id.*

170. *Id.*

placed on the tape is more expensive than the typical phonorecord.¹⁷¹

The court stated that Equitable's intangibility argument would have merit

if the direct input by keyboard, without documentation, alternative (a service transaction) or the electronic transmission, without documentation, alternative (no tangible carrier) is the form of transaction under consideration. But, because a taxable transaction might have been structured in a nontaxable form, it does not thereby become nontaxable.¹⁷²

Equitable also argued that a purchased program "can be and was in fact severed and exists apart from the tangible transfer medium" ¹⁷³ The copy delivered to Equitable, however, did not become severed in any physical sense from the tape when the tape was used to structure the computer memory.¹⁷⁴

The court did "not discern any legally significant difference, for sales tax purposes between the canned computer program on magnetic tape and music on a phonograph record."¹⁷⁵ The court quoted the Final Report of the Commission on New Technological Uses of Copyrighted Works: "Both recorded music and computer programs are sets of information in a form which, when passed over a magnetized head, cause minute currents to flow in such a way that desired physical work is accomplished."¹⁷⁶ In the case of the phonograph record, the Maryland sales tax statute was never "viewed as conceptually severing the copy of the performance from the tangible carrier."¹⁷⁷ The court concluded that "the statute does not sever copies of computer programs from the tangible carriers employed in the subject sales."¹⁷⁸

*Chittenden Trust Co. v. King*¹⁷⁹ was decided by the Supreme Court of Vermont the day after *Equitable* was decided. In *King*, "the Department of Taxes (Department) assessed a compensating use tax of \$471 against the Chittenden Trust Company (Bank) for the purchase

171. *Id.*

172. *Id.* This form over substance argument was also adopted by the court in *Chittenden Trust Co. v. King*, 143 Vt. 271, 465 A.2d 1100 (1983).

173. *Equitable*, 296 Md. at 485, 464 A.2d at 261.

174. *Id.*

175. *Id.*

176. *Id.* See CONTU REPORT, *supra* note 40 at 10.

177. *Equitable*, 296 Md. at 485, 464 A.2d at 261.

178. *Id.*

179. 143 Vt. 271, 465 A.2d 1100 (1983). The Supreme Court of South Carolina has recently determined that the sale of computer software is the sale of tangible personal property. See *Citizens and Southern Sys., Inc. v. South Carolina Tax Comm.*, Opinion No. 22024 (Filed Jan. 10, 1984).

of a 'canned' software tape valued at \$15,700."¹⁸⁰ The Department classified the tape as tangible personal property subject to taxation. The Bank contended the tape was intangible and therefore exempt from the tax.¹⁸¹

Chittenden Trust purchased the program in the form of a magnetic tape.¹⁸² The programming information, according to the court, could have been carried by other means, including punch cards, telephone lines, and personal programming.¹⁸³ The court concluded

[t]he fifteen to twenty "man-years" required to develop the "off the shelf" program accounted for most of its total value, since a blank magnetic tape may be purchased for approximately \$15. Once the information was transferred into the computer's memory, the tape was of negligible value to the Bank, and may be reused, destroyed or returned to its original distributor.¹⁸⁴

The court, holding for the Department, concluded that the computer tape was tangible personal property and, therefore, its sale was subject to taxation. The court cited the applicable Vermont Statute which provides the following definition of tangible personal property:

[P]ersonal property which may be seen, weighed, measured, felt, touched or in any other manner perceived by the senses and shall include fuel and electricity, but shall not include rights and credits, insurance policies, bills of exchange, stocks and bonds and similar evidences of indebtedness or ownership.¹⁸⁵

In holding that the computer tape was tangible personal property, the court noted that the tape could be seen, weighed, measured, and touched. The tape was not a right or credit.¹⁸⁶ The court rejected the Bank's contention that the "focus of the transaction" was the transfer of intangible knowledge and information, rather than the tangible magnetic tape, because the purchase of an "off the shelf" program does not involve the sale of personal services. It involves the sale of tangible personal property.¹⁸⁷

The court also rejected the Bank's attempts to distinguish a computer program tape from other taxable personal property such as

180. *Chittenden Trust Co.*, 143 Vt. at 272, 465 A.2d at 1100.

181. *Id.* at 273, 465 A.2d at 1101.

182. *Id.*

183. *Id.*

184. *Id.*

185. *Id.* at 273-74, 465 A.2d at 1102. See also VT. STAT. ANN. tit. 32 § 9701(7) (1981).

186. *Chittenden Trust Co.*, 143 Vt. at 273-74, 465 A.2d at 1102.

187. *Id.* at 274, 465 A.2d at 1102.

films, videotapes, books, cassettes, and records. Its reasoning was that the value of each "lies in their respective abilities to store and later display or transmit their contents."¹⁸⁸ A computer software tape, the court concluded, is no different.¹⁸⁹ Specifically, the court stated:

It may well be that the Bank could have procured, by way of telephone or personal service, the same programming information so as to avoid a use tax. To base the tax consequences of a transaction on how it could have been structured 'would require rejection of the established tax principle that a transaction is to be given its tax effect in accord with what actually occurred and not in accord with what might have occurred.' . . . This we will not do. The Bank must accept the consequences of its choice to purchase the program in the form of a tape.¹⁹⁰

It will take some time to determine whether the decisions in *Equitable* and *Chittenden* are aberrations or the birth of a trend. Many state legislatures have adopted statutes that classify canned and custom software as either tangible or intangible. Several states, however, have not yet addressed the tangibility issue as it relates to software. As technology advances, some states may reexamine their position on software. Future decisions may be influenced by *Equitable* and *Chittenden*.

VII. FEDERAL TAXATION OF COMPUTER SOFTWARE

A. *The Investment Tax Credit*¹⁹¹

Computer hardware qualifies for the investment tax credit.¹⁹² Therefore, computer software, in certain instances, may also qualify for the investment tax credit. Revenue Procedure 69-21 addresses the software issue.¹⁹³ It defines computer software to include:

[A]ll programs or routines used to cause a computer to perform a desired task or set of tasks, and the documentaion required to describe and maintain those programs. Computer programs of all classes, for example, operating systems, executive systems,

188. *Id.*

189. *Id.*

190. *Id.* (quoting *Commissioner v. National Alfalfa Dehydrating & Milling Co.*, 417 U.S. 134,148 (1974)).

191. The Internal Revenue Service is currently drafting proposed regulations that, if adopted, would classify software as intangible and therefore ineligible for the investment tax credit. See *Accelerated Cost Recovery System*, 49 Fed. Reg. 5939-5941 (1984).

192. The investment tax credit rules are covered in I.R.C. §§ 38 - 50 (1980), and Treas. Reg. §§ 1.38-1 (1979) - 1.50 (1984).

193. Rev. Proc. 69-21, 1969-2 C.B. 303.

monitors, compilers and translators, assembly routines, and utility programs as well as application programs are included. "Computer software" does not include procedures which are external to computer operations, such as instructions to transcription operators and external control procedures.¹⁹⁴

This revenue procedure specifically permits a taxpayer consistently either to expense software development costs or to amortize them over five years or less, similar to research and experimental expenditures.¹⁹⁵ Purchased software costs that are included in the price of hardware, and are not separately stated, are treated as tangible. They may be amortized over five years or less. Software that is leased for use in a trade or business may be deducted in accordance with Regulation 1.162-11.¹⁹⁶ An Internal Revenue Service Revenue Ruling¹⁹⁷ allows the investment credit to be taken for software, the cost of which is included in the cost of the hardware. If software development costs have been expensed in prior years and the taxpayer capitalizes software costs incurred for a new software project, the IRS will consider the practice to be a change in accounting method and require approval.¹⁹⁸

The IRS treats software that is separately priced as intangible property. Therefore, it does not qualify for the investment tax credit. Many state courts also treat software as intangible for sales, use, and property tax purposes.¹⁹⁹ Three recently decided state tax cases held, however, that software is tangible for sales²⁰⁰ and use²⁰¹ tax purposes. These three decisions are diametrically opposed to the weight of judicial precedent.

At least one case, *Hancock v. State*,²⁰² has held software to be tangible for criminal law purposes. In *Hancock*, a Texas man stole several computer programs from his employer. He claimed that he had committed petty larceny, rather than grand larceny, because the only tangible property he stole was the paper on which the programs

194. *Id.* at § 2.

195. I.R.C. § 174 (1982); Treas. Reg. § 1.174 (1984).

196. *See supra* note 7.

197. Rev. Rul. 71-177, 1971-1 C.B. 5.

198. Rev. Rul. 71-248, 1971-1 C.B. 55.

199. *See supra* notes 55-107 and accompanying text.

200. *Comptroller of the Treasury v. Equitable Trust Co.*, 296 Md. 459, 464 A.2d 248 (1983).

201. *Chittenden Trust Co. v. King*, 143 Vt. 271, 465 A.2d 1100 (1983). *See also* *Citizens and Southern Sys., Inc. v. South Carolina Tax Comm.*, 280 S.C. 138, 311 S.E.2d 717 (1984).

202. 402 S.W.2d 906 (Tex. Crim. App. 1966).

were printed. The value of the paper, he argued, was less than fifty dollars. The court disagreed, holding that the programs had a value in excess of the paper on which they were printed. The court concluded that tangible property, for purposes of the criminal statute, was stolen.²⁰³

In *Computer Sciences Corp. v. Commissioner*,²⁰⁴ computer software was held to be intangible for collapsible corporation²⁰⁵ purposes. In that case, Computax, a wholly owned subsidiary of Computer Sciences Corporation, owned a program for the computer preparation of income tax returns. The Commissioner argued that a collapsible corporation has been established to avoid tax liability. Computer Sciences Corporation claimed that property manufactured, constructed, or produced (such as the Computax program) was not intended to apply to intangible property of any type.²⁰⁶ If the section was designed to be applied to intangible property, Computer Sciences Corporation argued that no such intangible property was produced since all that it produced and developed for transfer to Computax was "know-how" and "goodwill," not "property."

Other court cases have addressed the tangibility issue for motion picture film negatives and software. In the first of a series of Walt Disney cases,²⁰⁷ the issues included whether motion picture film negatives were tangible personal property for federal tax purposes, and whether the motion picture film negatives qualified for the investment tax credit.

The district court held that the mature film negatives were tangible personal property for federal tax purposes. It held further that the master motion picture film negatives used in the film manufacturing process were tangible personal property within the meaning of the Internal Revenue Code of 1954.²⁰⁸ They had a useful life of more than eight years, they were depreciable, and they were eligible for the investment tax credit.²⁰⁹ The Commissioner contended that the nega-

203. *Id.* at 911.

204. 63 T.C. 327 (1974).

205. I.R.C. § 341(b)(2) (1982).

206. I.R.C. § 341; Treas. Reg. § 1.341-1 (1979).

207. *Walt Disney Productions v. United States (Disney I)*, 327 F. Supp. 189 (C.D. Cal. 1971), *aff'd. as modified*, 480 F.2d 66 (9th Cir. 1973), *cert. denied*, 415 U.S. 934 (1974). The *Disney I* holding has since been codified at I.R.C. § 48(K) (1982) as a result of the Tax Reform Act of 1976. The rationale of this case, however, continues to provide strong support for the tangibility of computer software. See *Disney I*, 327 F. Supp. at 191-92.

208. *Disney I*, 327 F. Supp. at 192.

209. *Id.* at 190.

tives were not tangible personal property within the meaning of IRC Section 48(a)(1)(A)²¹⁰ and that they did not have a useful life of eight years. Therefore, the Commissioner contended they could not qualify for the investment tax credit.

Film negatives are used to make prints. The prints are copyrighted and exhibited in theaters or on television. The negatives, however, are not copyrighted. The Commissioner argued that all labor and production costs of the negatives must be attributed to the copyrighted prints.

The court held for Walt Disney Productions.²¹¹ Motion picture film negatives were considered tangible personal property, notwithstanding Reg. 1.48-1(f)²¹² which the court determined was invalid. The negatives in question had a useful life sufficiently long to qualify for the investment credit.²¹³ Film negatives, like production machinery, are standardized units of depreciable property which Disney used to produce the positive prints. The Commissioner's attribution of the entire value of the film to the copyright was unwarranted. The court analogized such attribution to a situation in which the entire value of a machine used in production is attributed to a patent.²¹⁴

A third Disney case²¹⁵ further addressed the film negative tangibility issue. In this case, Walt Disney Productions sued for a tax refund. It claimed the investment tax credit under 26 U.S.C. Sections 38, 46-50 (1970) for the cost of numerous film negatives produced by the company in 1970. The district court ordered the government to make the refund and the government appealed.

Disney sought the investment tax credit for the production costs of the "master negative" from which positive prints are ultimately produced.²¹⁶ Disney, in calculating its credit, claimed "all the capitalized costs necessary to produce the master negative."²¹⁷ Disney did not

210. *Id.* at 191. I.R.C. § 48(a)(1)(A) (1982) states in pertinent part: "[Investment tax credit] property means tangible personal property." *Id.*

211. *Disney I*, 327 F.Supp at 193.

212. *Id.* at 191-92.

213. *Id.* at 190-91.

214. *Id.* at 191-92.

215. *Walt Disney Productions v. United States (Disney III)*, 549 F.2d 576 (9th Cir. 1977).

216. *Id.* at 578-80. The "masternegative" has two distinct components, an edited, negative version of the film itself ("cut-picture negative"), and a magnetic tape version of the soundtrack ("magnetic master sound tape"). *Id.* at 578-79. The audio is then converted from magnetic tape to transparent film ("optical sound negative"), while the visual footage is passed through its own intermediate production stage. At this stage the audio and visual components are referred to collectively as "completion negatives." *Id.*

217. *Id.* at 580. These costs were for the script, the actors' salaries, the set construc-

claim the costs incurred in producing the "completion negatives," nor did it claim as investment credit property the unmixed dialogue, music, or sound effect tapes, although the expense for those items was claimed in computing the overall production costs of the master negative.²¹⁸

The depreciable base used by Disney accountants included the capitalized costs of producing answer prints.²¹⁹ The court described the income-forecast method used by Disney to depreciate each film title as the method "generally used for depreciating intangible personal property."²²⁰

Disney had claimed an investment tax credit amounting to seven percent of its qualified investment in the master negatives it had produced in 1970. The Commissioner ruled the costs were an investment in an intangible property and refused to recognize the investment tax credit.²²¹ The government took the position that, while a master negative was "tangible" in that it consists of film stock and tape, the tangibles, by themselves, were nothing and had no depreciation bases for tax purposes apart from intangible rights included in the finished product.²²² The court held that the master negatives were indeed tangible property, even though the bulk of their value came from intangible rights.²²³

The government next argued that since Disney had treated the property in question as intangible for depreciation purposes, the property must also be considered as intangible (and therefore not eligible) for investment tax credit purposes.²²⁴ According to the court,

[t]he government contended that even if Disney's production costs could qualify for the credit, a portion of the credit allowed for prior taxable years was subject to recapture because the motion pictures involved were exhibited predominantly outside the United States in 1970. In that year, more than 50 percent of Disney's gross receipts from exhibition of prints produced from 1962-69 master negatives

tion, as well as the cost of editing and mixing the original negatives and audio tapes to produce a "cut-picture" negative and master sound tape. *Id.* at 580 n.2.

218. *Id.* at 581.

219. *Id.* at 580. This included the costs of the optical sound negatives but excluded the costs of the intermediate visual stage. *Id.*

220. *Id.*

221. *Id.*

222. *Id.* at 582.

223. *Id.* at 580-81. The court pointed out that it had previously reached the same conclusion in *Disney I* and *Disney II*. *Id.* at 580.

224. *Id.* at 581.

came from foreign sources.²²⁵

The court held for Disney on three major points. First, master negatives used in the film manufacturing process were held to be tangible property for investment tax credit purposes.²²⁶ Second, the full seven percent credit could be claimed because the negatives had a sufficiently long useful life.²²⁷ Third, the fact that the motion pictures involved were exhibited outside the United States in 1970 did not subject a portion of the investment tax credit allowed for prior taxable years to recapture.²²⁸

The decision reached in *Disney III* is consistent with *Disney I*. In *Disney III* the court draws an analogy between a master negative and a machine that stamps out patented products for sale.²²⁹ The stamping machine is tangible even though the product it produces is protected by an intangible copyright. The same is true of master film negatives.²³⁰ Legislative history, discussed in detail in *Texas Instruments, Inc. v. United States*,²³¹ also indicates that it was the intent of Congress that items such as the master film negatives be treated as tangible property qualifying for the investment tax credit.²³²

In *Disney III*, the court relied on Treasury Regulation Section 1.48-1(g)(1)(i) which provides that property physically located outside the United States during more than fifty percent of the year shall be considered used predominantly outside the United States.²³³ Such property is therefore ineligible for the investment tax credit. The master negatives (upon which the investment tax credit was claimed) remained in the United States throughout 1970. Only the exhibition prints left the country. The investment tax credit was not claimed on them. Therefore, no investment tax credit need be recaptured.²³⁴

The court also held that even though the property in question may be treated as intangible for depreciation purposes, such treatment does not preclude tangible treatment for purposes of the investment tax credit. Three other cases have addressed this same issue,²³⁵ and have reached the same conclusion.

225. *Id.* at 582.

226. *Id.* at 580.

227. *Id.* at 580-81.

228. *Id.* at 582.

229. *Disney I*, 327 F.Supp. at 192; *Disney III*, 549 F.Supp. at 578.

230. *Disney III*, 549 F. Supp. at 581.

231. 407 F. Supp. 1326 (N.D. Tex. 1976), *rev'd in part*, 551 F.2d 599 (5th Cir. 1977).

232. *Disney III*, 549 F.2d at 582.

233. Treas. Reg. § 1.48-1(g)(1)(i) (1964).

234. *Disney III*, 549 F.2d at 582.

235. The following three cases were heard together on appeal. Bing Crosby Produc-

In *Texas Instruments, Inc. v. United States*,²³⁶ the court addressed the issue of whether computer tapes, including the value of the data contained therein, are considered tangible personal property for investment tax credit and depreciation purposes. During 1968 and 1969, a subsidiary of Texas Instruments was

engaged in the business of collecting, processing and selling or licensing offshore seismic information to various customers who, in turn, used that information to explore for oil and gas. While the information was furnished to the customer in picture form depicting the contours of the earth's different strata, the actual collection and editing process involved a complicated computer process.²³⁷

Seismic data were transmitted by electronic impulses and transcribed onto magnetic computer tapes known as "field" tapes. From these field tapes, a "final" or "output" tape was produced. The pictures were then produced from the final tape.²³⁸

When a customer placed an order for the information, according to the court, he received a copy of the original picture produced by the process, a map locating the points where the sound waves were introduced into the earth, and a report outlining the conditions under which the tests were conducted. The Texas Instruments subsidiary company retained all field and output tapes as well as the original analog film. Information furnished on the picture to customers was licensed on a non-exclusive basis. Customers were generally not permitted to make the data available to others.²³⁹

Costs incurred in 1968 and 1969 were in excess of \$3,000,000, and were deducted by the taxpayer as ordinary and necessary business expenses. The Internal Revenue Service disallowed these deductions and determined that the costs should be capitalized and amortized over a seven year period.²⁴⁰ Texas Instruments did not dispute this determination, but insisted that it was entitled to an investment tax credit and to use the double-declining balance method of depreciation on the total capitalized costs of the field tapes, output tapes, and analog film.²⁴¹ The IRS contended that these tax benefits were applicable only to the cost of the raw tape and film itself, not to the full cost of

tions, Inc. v. United States; *Sussex Pictures, Inc. v. United States*; and *University City Studios, Inc. v. United States*, 588 F.2d 1293 (9th Cir. 1979).

236. 551 F.2d 599 (5th Cir. 1977).

237. *Id.* at 608.

238. *Id.*

239. *Id.* at 608-09.

240. *Id.* at 609.

241. *Id.*

producing the tapes and film.²⁴²

At the district court level,²⁴³ the government's position was sustained on two grounds. First, when a taxpayer places into service tangible personal property that it produced itself, the investment tax credit may be taken only for the costs of the tangible inputs used. Labor and other intangible costs must be excluded. Since Texas Instruments failed to allocate its costs between the tangible and intangible inputs, no investment tax credit may be claimed.²⁴⁴ Second, the costs incurred in producing and processing the seismic data on the tapes and film did not constitute making an investment in tangible property, but rather intangible information.²⁴⁵

On appeal, the government conceded that the district court's analysis on the first ground was erroneous. It sought to sustain the district court's judgment on the second ground, however, arguing that the capital asset in which the taxpayer's costs are invested is essentially intangible. Therefore, all costs of acquiring or producing that asset constituted the basis of an intangible asset; the investment tax credit and the double declining balance method of depreciation were unavailable.²⁴⁶

On appeal, the court held for Texas Instruments.²⁴⁷ Treasury Regulation Section 1.48-1(F) states:

Intangible property, such as patents, copyrights, and subscription lists, does not qualify as section 38 property. The cost of intangible property, in the case of a patent or copyright, includes all costs of purchasing or producing the item patented or copyrighted. Thus, in the case of a motion picture or television film or tape, the cost of the intangible property includes manuscript and screenplay costs, the cost of wardrobe and set design, the salaries of cameramen, actors, directors, etc., and all other costs properly includible in the basis of such film or tape.²⁴⁸

Treasury regulations, the court recognized, are ordinarily entitled to considerable weight in construing the statutory language.²⁴⁹ The court pointed out, however, that the Ninth Circuit had previously

242. *Id.*

243. *Texas Instruments, Inc. v. United States*, 407 F. Supp. 1326 (N.D. Tex. 1976).

244. *Id.* at 1341-42.

245. *Id.*

246. *Texas Instruments*, 551 F.2d at 609.

247. *Id.* at 610-11.

248. *Treas. Reg.* § 1.48-1(F) (1983).

249. *Texas Instruments*, 551 F.2d at 610.

ruled the regulation to be invalid as applied to film.²⁵⁰ The *Texas Instruments* court agreed with the Ninth Circuit's decision.²⁵¹ When Congress reenacted the investment tax credit in 1971, it expressly indicated its agreement with the *Disney I* holding that motion pictures and television films are tangible personal property, eligible for the investment credit.²⁵² Furthermore, the Tax Reform Act of 1976 added Section 48(k) to the Internal Revenue Code, and treats motion picture and television films as tangible personal property eligible for the investment tax credit.²⁵³

In *Texas Instruments*, the court held that the property in question was tangible personal property and therefore qualified for the investment tax credit and for the use of the double declining balance method of depreciation. For investment tax credit and depreciation purposes, the basis of tangible tapes and films on which the taxpayer recorded seismic data included the cost of collecting the data and recording it on the raw tapes and films.

B. *The Credit for Research and Experimental Expenditures*

As a general rule, business expenditures to develop or create an asset which has a useful life that extends beyond the current taxable year, such as expenditures to develop a new consumer product or to improve a production process, must normally be capitalized. They cannot be deducted in the year that they are paid or incurred. Such product development costs are usually recovered only on disposition or abandonment of the asset, or through depreciation or amortization deductions taken over the useful life of the asset.

Internal Revenue Code Section 174, however, permits a taxpayer to elect special tax accounting methods for certain research or experimental expenditures which are paid or incurred during the taxable year in connection with the taxpayer's trade or business.²⁵⁴ Under section 174, a taxpayer may elect to deduct currently the amount of qualified research or experimental expenditures, or to deduct those expenditures ratably over the useful life of the property or a period of

250. *Id.* (citing *Walt Disney Productions v. United States*, 327 F. Supp. 189 (D.C. Cal. 1971), *aff'd on appeal*, 480 F.2d 66 (9th Cir. 1973), *cert. denied*, 415 U.S. 934 (1974)).

251. *Texas Instruments*, 551 F.2d at 610.

252. S. Rep. No. 92-437, 92d Cong., 1st Sess. 34 (1971), *reprinted in*, 1971 U.S. Code Cong. & Ad. News, 1918.

253. *See also* Treas. Reg. § 7.48-1(a) (1983).

254. I.R.C. § 174(a)(1) (1984). The Internal Revenue Code permits taxpayers to "treat research or experimental expenditures which are paid or incurred during the taxable year in connection with [a] trade or business as expenses which are not chargeable to [a] capital account." *Id.* "The expenditures so treated shall be allowed as a deduction." *Id.*

sixty months, whichever is less. A taxpayer may choose either method of deduction treatment provided it is consistent. Furthermore, this special method of tax accounting for research or experimental expenditures does not have to be consistent with the method the taxpayer uses to compute its income in keeping its books. Thus, a taxpayer may, for tax purposes, elect to deduct currently the amount of research or experimental expenditures, even if such expenses are treated as capital account charges or deferred expenses on the taxpayer's books or financial statements. Section 174 does not specifically define the "research and development costs in the experimental or laboratory sense."²⁵⁵

Since 1969, the Internal Revenue Service has taken the position that taxpayers may treat costs incurred in developing new or improved computer software in a manner similar to costs incurred in product development. Such costs generally fall under section 174. As a result, many computer services companies have elected to treat their software research and development expenses under section 174 and either deduct those expenses currently, or, where it appears more advantageous from a tax standpoint, amortize those expenses over five years or less. The Internal Revenue Service has not, however, expressly stated that software development costs are within the scope of "qualified research" under Section 174.

The research credit is designed to encourage businesses to increase the amounts they spend on research and experimental activities. The credit is equal to twenty-five percent of the increase in research expenses for the year over average research expenses during an earlier base period.²⁵⁶ The research credit can be taken for research expenditures incurred after June 30, 1981, and before January 1, 1986.²⁵⁷

255. *Id.*

256. I.R.C. § 44F(a) (1984). *See also* I.R.C. § 174 (1984); the Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, § 221(a), 95 stat. 241 (1981), *reprinted in*, 1981 U.S. Code Cong. & Ad. News 172,241.

257. Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, Sec. 221(a) (codified as 26 U.S.C. § 44F (1983)). This period may be extended by pending legislation. On January 21, 1983, proposed regulations were issued that, if adopted, would place more stringent restrictions on software than on other types of research and experimental expenditures. 48 Fed. Reg. 2799 (1983)(to be codified at 26 C.F.R. § 1.174-2(a)(3)). As a result of substantial public outcry, the proposed regulations have been withdrawn for further drafting. *See* Yost, *A Survey of Tax Issues Affecting Software Developers and Users*, TAX EXECUTIVE 120,128-33 (1984); Arthur Andersen & Co., *Research and Development*, Washington Tax Letter, Sept. 23, 1983, at 3; letter from Arthur Young & Co. to Commissioner of Internal Revenue (March 25, 1983)(discussing proposed regulations on credit for increasing research activity-internal revenue code sections 44F and 174); letter from Arthur Young & Co. to Commissioner of Internal Revenue (March 16, 1983)(discussing proposed treasury

C. *A Controversy*

In 1981, Congress expressed its concern over the decline of this nation's research and development activities and the reluctance of many businesses to expand significantly their research investment, absent tax incentives. Congress enacted a credit for increased research and experimental expenditures. The new credit²⁵⁸ gives a direct reduction in bottom line tax liability for incremental increases in qualified research expenses. In other words, the excess of qualifying current year expenses over average base period expenses.²⁵⁹ This credit equals twenty-five percent of the excess (if any) of the taxpayer's average "qualified research expenses" for the taxable year over the taxpayer's average qualified research expenses in a base period (one year, two years, or three years).

On January 21, 1983, the Treasury Department issued proposed regulations²⁶⁰ that, if adopted, would provide guidance for the implementation of section 44F. Due to public outcry, the proposed regulations have been recalled for further drafting. As drafted, the proposed regulations would have set separate, and more strict, standards for software development than for other research activities. This stricter standard would have precluded software expenditures from qualifying for the research credit unless the software project was virtually guaranteed to fail from the start, because operational feasibility of a program must be seriously in doubt before costs of development could be

regulation section 1.174-2(a)(3) and (4)); Barres, *Tracking the Accounting and Taxation Methods of the Computer Software Industry*, (1984)(unpublished M.B.A. thesis, New York University); Barry, Goldstein & Brehmer, *Proposed Regs. on the Credit for Research and Experimental Expenditures: An Analysis*, 59 J. TAX'N 76,76-83 (1983); Black & Reese, *The Taxation of Computer Technology*, 14 THE TAX ADVISOR 84,84-97 (1983); Computer and Business Equipment Manufacturers Assoc., *Computer Industry Leaders Declare IRS Violating Congressional Intent on Software Regulations*, Industry News, April 7, 1983; *Computer-Software Developers Find Hope in the Research - Credit Dispute*, Wall St. J., April 27, 1983, at 1, col. 1; Hershey, *Computer Tax Rules Assailed*, N. Y. Times, Apr. 25, 1983, at D2, col. 1; Damsky, *Integration of the Section 44F Research Tax Credit into the Research Investment Venture*, 61 TAXES 127 (1983); Feinschreiber, *Defining Research for Purposes of the Research Credit*, 35 TAX EXECUTIVE 159 (1983); *IRS Proposals on R & D are Inadequate High Tech Incentive*, Entrepreneur, August, 1983, at 32; Silversmith, *Tax Credit for Increasing Research Activities*, 69 A.B.A.J. 90, 90-93 (1983); Wasserman, *Section 174 and Computer Software Development*, 61 TAXES 506, 512 (1983); Wilkins, *IRS Seeks to Eliminate Software Tax Credits*, Management Information Systems Week, April 20, 1983, at 20; McGee, *Software Taxation: A New NAA Research Study*, MANAGEMENT ACCOUNTING 70,70-71,77 (1984).

258. 26 U.S.C. § 44F(1983).

259. Pub. L. No. 97-34, § 221(a)(codified at 26 U.S.C. § 44F (1983)).

260. Amendments to § 1.174-2, 48 Fed. Reg. 2790 (1983)(to be codified at 26 C.F.R. Part 1 § 1.174-2). See *supra* note 257.

considered for the research credit. The costs associated with generating programs using standard programming techniques would therefore not qualify for the credit.

As stated in the proposed regulations, the costs of generating programs using standard programming techniques would not qualify for the research credit even if such costs were part of a project that otherwise qualified for the credit. For example, the research costs associated with developing a cure for arthritis would qualify for the research credit, but any software costs associated with the project would not qualify if standard programming techniques were employed. Setting a separate and higher standard for software is a radical departure from the current practice. Such a double standard violates congressional intent.

D. *Congressional Intent*

When Congress passed Public Law No. 97-34, it was with the intent that computer software development costs would qualify for the research credit. According to the Republican Senator from Kansas, Robert Dole,

[W]ages incurred in developing new or significantly improved computer software and which presently may be treated in a manner similar to section 174 research or experimental expenditures are intended to qualify for the new research credit, provided that they also meet the requirements of new section 44F which are added to the requirements of section 174 and provided they are not subject to the specific exclusions of new section 44F.²⁶¹

The House Ways and Means Committee indicated a similar intent: „

[E]xpenditures which otherwise would qualify for the new credit are not to be disqualified solely because such costs are incurred in developing computer "software," rather than in developing "hardware."²⁶²

E. *Treasury Department Misinterpretation*

By drafting regulations that set a separate and more strict standard for software development than for other research activities, the Treasury has misinterpreted congressional intent.²⁶³ Sections 174 and

261. 127 CONG. REC. S 8109 (daily ed. July 21, 1981)(statement of Sen. Dole).

262. H.R. REP. NO. 201, 97th Cong., 1st Sess. 114 (1981).

263. Proposed Regulation 1.174-2, 48 F.R. 2790 (1983).

44F share a common definition of "research." Certain research expenditures that qualify for the section 174 deduction election do not qualify for the research credit. For example, research expenditures may qualify under section 174 if paid or incurred in connection with taxpayer's trade or business.²⁶⁴ These same research expenditures, however, will not qualify for the research credit unless paid or incurred in maintaining a trade or business.²⁶⁵ Furthermore, expenditures incurred to conduct research outside the United States may qualify for deduction under section 174, but do not qualify for the research credit.²⁶⁶ In addition, expenditures that do not qualify for deduction under section 174 are not eligible for the research credit.²⁶⁷

The Internal Revenue Service has officially proclaimed that the proposed regulations²⁶⁸ are in accord with congressional intent. According to the IRS, that intent is recorded by the Staff of the Joint Committee on Taxation.²⁶⁹ Staff explanations do not constitute official legislative history. They are, however, sometimes used as persuasive authority.²⁷⁰ In this instance, the Staff has clearly misconstrued congressional intent.

The Staff explanation was drawn from two principal sources: the House Ways and Means Committee Report²⁷¹ and the Senate Finance Committee Report.²⁷² These reports addressed separate and different research credit proposals. Portions of both reports were eventually incorporated into the Economic Recovery Tax Act of 1981 (ERTA);²⁷³ but only after amendment and a series of compromises.

The original House proposal²⁷⁴ contained a definition of "research" that was derived from the Financial Accounting Standards Board's definition of "research and development."²⁷⁵ The FASB defi-

264. I.R.C. § 174(a)(1) (1982).

265. I.R.C. § 44F(b)(1) (1982).

266. I.R.C. § 44F(d)(1) (1982).

267. Proposed Regulation 1.44 F-4, 48 F.R. 2790 (1983).

268. Proposed Regulation 1.174-2, 48 F.R. 2790 (1983).

269. See STAFF OF THE JOINT COMMITTEE ON TAXATION, GENERAL EXPLANATION FOR THE ECONOMIC RECOVERY TAX ACT OF 1981 117-137 (issued Dec. 31, 1981).

270. H.R. REP. NO. 215, 97th Cong. 1st Sess. 223-24 reprinted in 105 U.S. Code & Ad. News 313-14 (1981).

271. H.R. REP. NO. 201 at 109.

272. S. REP. NO. 144, 97th Cong. 1st Sess. 75 reprinted in 105 U.S. Code & Ad. News 180-82 (1981).

273. Pub. L. No. 97-34, § 221, 95 Stat. 172, 241-247 reprinted in 1981 U.S. Code Cong. & Ad. News 172, 241-47 (1981).

274. "Tax Incentive Act of 1981," H.R. 4242, 97th Cong. 1st. Sess. § 241.

275. Financial Accounting Standards Board, *Statement No. 2*, "Accounting for Research and Development Costs" (1974).

nition was not intended to be controlling for purposes of the research credit.²⁷⁶ The House Ways and Means definition, which was not adopted, did not contain any cross reference to Section 174 "research and experimental expenditures" in the definition of "qualified" research. Congress preferred broader language to a detailed definition and adopted the Senate version instead. Originally, the Senate proposal addressed only wage expenditures, but other costs were subsequently addressed. In the version that was finally adopted by Congress, "qualified research" was given the same general meaning as "research or experimental in section 174."²⁷⁷

Because the Senate version was adopted, the Ways and Means definition should not receive much weight. The House Ways and Means Committee intended to have software costs included in qualified research expenditures, and the Committee stated specifically that such costs should be included.²⁷⁸

276. H.R. Rep. No. 201 at 111 n.3.

277. I.R.C. § 44F(d) (1982).

278. H.R. REP. NO. 201 at 114.