State and Federal Taxation of Computer Software: A Functional Approach, 4 Computer L.J. 737 (1984)

Christian E. Markey III

Recommended Citation

STATE AND FEDERAL TAXATION OF COMPUTER SOFTWARE: A FUNCTIONAL APPROACH

I. INTRODUCTION

Few industries have had a greater impact upon this country in the last thirty years than the computer industry. Nearly everything that we come in contact with has some link to a computer. The industry's growth has been nothing short of extraordinary.

One example of this growth is the development of the "personal computer," a relatively new phenomonon to hit the American marketplace. Although the personal computer is only a small (though ever-increasing) fraction of the entire computer industry, the *entire* desktop or personal computer market is expected to net $3 billion in 1982 and over $12 billion by 1985.[1] The 1982 sales figures for software to personal computers *alone* is expected to reach $590 million,[2] an 82% increase over the previous two years. By 1986, these figures should top $2.2 billion—a 373% increase over the four year period.[3] This rate of growth is an accomplishment of which few, if any, industries can boast. Consequently, few industries need worry about the tax consequences of such spiraling growth.

This Note will begin with a prefatory section on computers and the computer industry. Next, the problems facing state and federal taxing agencies in their efforts to tax computer software will be presented. Thereafter, the current status of state and federal taxing agency decisions and judicial caselaw will be analyzed and critiqued. Once the confusion and infirmities of the software taxation area are exposed, this Note will propose that a functional approach divide software for purposes of taxation into two distinct groups: operational/system software and applicational software. Firmware would be included in the operational side of the dichotomy. This Note does not posit that a uniform software taxation scheme would be practicable or in the best interests of all fifty states; rather, this

---

1. Whitebrook & Tosi, *Protecting Computerland's Fragile New Trade Secrets*, 2 CAL. LAW., Oct. 1982, at 43, 44.

2. Taylor, *How Programmers Get Rich*, TIME, Dec. 13, 1982, at 56.

3. *Id.*

Note proffers a plan whereby each state could choose to exempt applicational programs from taxation or tax all software and firmware. The implementation of this proposal will allow state and federal governments and the private sector to finally ascertain with certainty the present and future tax revenues and liabilities of computer software acquisitions.

II. BACKGROUND

To facilitate the reader's comprehension of the issues addressed in this Note, a brief description of computers and the computer industry will follow.

"A computer is a mechanical device for receiving, storing, and retrieving information. It performs the functions which at one time were performed by clerks in receiving and filing information and in keeping books on that information."[4]

A typical computer system consists of a central processing unit (CPU) which houses the arithmetic and logical electronic circuits,[5] a variety of peripheral equipment[6] and its software components.[7] The functions of the peripheral equipment include: storing data for later access by the CPU; feeding data into the CPU (input); and accepting data from the CPU (output).[8] Machines capable of reading data on punched cards and transferring that data to the CPU are considered input peripherals, while printers attached to the CPU function as output peripherals. Some peripherals, such as disc or tape drives, are capable of performing all three functions.[9]

Programs consist of specific sequences of arithmetic[10] and logi-

---

4. Colorado Springs Nat'l Bank v. United States, 505 F.2d 1185, 1191 (10th Cir. 1974).

5. *In re* IBM Peripheral EDP Devices, Etc., 481 F. Supp. 965, 972 (N.D. Cal. 1979). The computer's "circuits perform both arithmetic functions, such as adding two numbers together, and logical functions, whereby it compares the result of the addition to a third number and chooses between the various alternatives on the basis of that comparison." *Id.* at 971.

6. Greyhound Computer Corp. v. IBM Corp., 559 F.2d 488, 492 (9th Cir. 1977). Peripherals include: printers, card readers, tape drives, disc storage devices, and telecommunication switching devices. *See* Comment, *Software Taxation: A Critical Reevaluation of the Notion of Intangibility*, 1980 B.Y.U. L. Rev. 859 n.1.

7. Software is generally considered the set of machine readable programs that cause hardware to perform predetermined tasks. *See* Comment, *supra* note 6, at 859 n.2. However, software is a term that lacks an absolute definition. *See infra* text accompanying notes 48-75.

8. *In re* IBM Peripheral EDP Devices, Etc., 481 F. Supp. 965, 972 (N.D. Cal. 1979).

9. *Id.*

10. *See supra* note 5.

cal[11] functions to be performed.[12] Computers can be programmed by punched cards, electronic tapes or discs, or by an operator who manually programs the computer from either his own memory or printed instructions.[13]

The typical business computer, properly programmed, can perform four basic functions: first, to store and retain within its memories a complete filing system regarding every employee, purchase, item or widget within a particular business; second, to receive and record every change in each of these items; third, to furnish a complete up-to-date report concerning such changes; and fourth, to perform routine business tasks and computations, such as managing payrolls, printing checks, withholding or paying taxes, and reporting inventory.[14]

The data that is produced by these functions is normally stored on discs which can be randomly accessed very rapidly by an access arm that moves to a particular track on the disc where the data is to be read or written.[15] Random access of data on tape reels is impractical because it is so time consuming.[16]

> Computers, like the punched card accounting equipment that preceded them, depend upon the capabilities of the electronic circuits. . . . With punched card accounting equipment, programs were "hard-wired," that is, the sequence of functions to be performed by the arithmetic and logical circuits was predetermined, and could only be altered by actually switching wires around within the machine.[17]

Obviously, it is no longer necessary to rewire a computer in order to vary the sequence of functions performed by its arithmetic[18] and logical[19] circuits. That task was eliminated by advances in integrated circuit technology. Such advances have made computers

---

11. *See supra* note 5.

12. *In re IBM* Peripheral EDP Devices, Etc., 481 F. Supp. 965, 971-72 (N.D. Cal. 1979).

13. District of Columbia v. Universal Computer Assoc., 465 F.2d 615, 617 (D.C. Cir. 1972) (court held computer software was valuable only because of the intangible information on the computer cards and was thus not subject to the tangible personal property tax). The last alternative, manual programming, is obviously labor intensive, time-consuming and unpractical. Note that once a computer is programmed, the material with which it was programmed is of no further use unless it can be used to program another computer or is needed to reprogram the first computer. *Id.*

14. Honeywell, Inc. v. Lithonia Lighting, Inc., 317 F. Supp. 406, 408 (N.D. Ga. 1970).

15. *In re IBM* Peripheral EDP Devices, Etc., 481 F. Supp. 965, 972-73 (N.D. Cal. 1979).

16. *Id.* at 971.

17. *Id.* at 971-72.

18. *See supra* note 5.

19. *See supra* note 5.

smaller, cheaper, faster and more powerful. The computing power that was once housed in a 1955 International Business Machines (IBM) mainframe computer costing millions of dollars and filling an entire room is now available in an inexpensive hand-held calculator.[20]

Since the major computer manufacturers require different systems and technology for their hardware production, they are increasingly finding it more practical to let independent programmers occupy the software development area.[21] The major manufacturers do not have a monopoly on the skills required to perfect a program for any given computer. Though IBM still produces all of its own programs for its large mainframe computers, it established an industry precedent when it decided to encourage independent software development for its profitable Personal Computer.[22]

A. THE PROBLEM

Like any industry of this size and potential, the computer software industry has, and will continue to have, it share of problems. These problems include bundling and unbundling consequences,[23] copyright[24] and trade secret protection,[25] and program liability.[26]

---

20. McLellan, *Microelectronics and the Law: More Than Meets the Eye*, 87 CASE & COM., Nov.-Dec. 1982, at 3. The mid-1970s witnessed minicomputers in the $50,000 to $500,000 range which utilized mass-produced silicon chips comprised of thousands of circuits on a semiconductor crystal the size of a baby's fingernail. Whitebrook & Tosi, *supra* note 1, at 44. The best known chip and the heart of computer memories is the 64K random access memory (RAM) chip, which can store up to 64,000 bits of memory on a chip of silicon five millimeters square. The lines etched onto these chips to produce the electrical circuits are from four to six microns in width. For comparison, a human hair is 100 microns in diameter. McLellan, *supra*, at 3. Further advances have been made by the Japanese in developing a 256K RAM chip. Incidentally, some observers believe that Japan was able to develop the 256K RAM chip by using the profits derived from dumping 64K RAM chips on the American market. *Id.* at 4. *See generally Silicon Valley Has a Big Chip About Japan*, 282 ECONOMIST, Mar. 20, 1982, at 69-70.

21. Taylor, *supra* note 1, at 56.

22. *Id.*

23. *See* Goetz, *Unbundling: Will the 80's Repeat the 60's?*, COMPUTERWORLD, Apr. 14, 1980, at 33.

24. *New Shield for Data Programmers*, N.Y. Times, Dec. 4, 1980, at 27. Stern, *The Case of the Purloined Object Code*, 7 BYTE, Sept. 1980, at 420. Raysman & Brown, *Copyrights and Video Games*, 188 N.Y.L.J., Sep. 14, 1982, at 1.

25. Gilburne & Johnston, *Computer Software Protection Available in Trade Secret Law*, 5 LEGAL TIMES, Nov. 22, 1982, at 16. Raysman & Brown, *Trade Secret Protection of Software*, 186 N.Y.L.J., Dec. 3, 1981, at 1.

26. Brannigan & Dayhoff, *Liability for Personal Injuries Caused by Defective Medical Computer Programs*, 7 AM. J.L. & MED. 123 (1981).

Because of its financial impact, one of the more visible problems is that of the state and federal tax treatment of computer software.[27] Since the growth of the computer software industry is potentially unlimited, the federal government and many state governments have attempted to tap the industry's growing revenues through various taxes.[28] The muddled and uncertain application of these taxes creates major problems for the potential computer software purchaser. Among other things, a potential buyer[29] must consider where he is buying his software,[30] where the software will be used,[31] and who is going to develop, maintain and update the software when necessary.

Not only will each of these considerations have an impact on the taxes applicable to the particular software, but that impact will vary[32] depending upon the status of the software under the decisions and regulations of the applicable state court, federal court or taxing agency.[33]

Not surprisingly, the confusion that exists in the area of software taxation is present on both the state and federal level. This Note will attempt to resolve the differences that exist within each level as well as the differences that exist between the two levels. Although state and federal uniformity would make life less complicated, differences between state and federal treatment of an

---

27. Bryant & Mather, *Property Taxation of Computer Software*, 18 N.Y.L.F. 59 (1972); Ferraro, *Software: A Practical Appraisal Viewpoint*, 6 ASSESSORS J. 65 (1972); Heinzman, *Computer Software: Should It Be Treated As Tangible Property For Ad Valorem Tax?*, 37 J. TAX'N 184 (1972); Note, *The Revolt Against Property Taxation of Software*, 9 SUFFOLK U.L. REV. 118 (1974); Rosen, *Computer Software Classed as Intangible Property is Exempt from State Property Tax*, 58 J. TAX'N 114 (1983). For the first time, a software package system—Cincom System Incorporated's Total Data Base Management System (DBMS)—exceeded $100 million in sales. Several other products exceeded $50 million. Recent information shows that the software products industry is annually grossing revenues around $2 billion from over 1000 companies marketing in excess of 3000 programs. *See* Goetz, *supra* note 23, at 35.

28. On the federal level, depreciation and the investment tax credit (ITC) are involved. On the state level, sales, use and personal property taxes are at stake.

29. This Note assumes that the potential software buyer is not a single individual simply looking for software for his home computer, but rather that he is part of a larger entity with more complex needs (in terms of quality and quantity) on an ongoing basis. Assuming a buyer knows what capabilities he wants from his computer, he will have to decide how he can best achieve those objectives.

30. In his home state, state of business, or out of state.

31. In one state, or in several states, at the business' various branches, or perhaps situated in one state but linked to branches in other states by a telecommunication system.

32. Significantly in some cases.

33. Note that there is not necessarily a perfect correlation between the opinions of a state or federal court and that of its taxing agency.

area of law is neither uncommon nor inherently evil. The goal of uniformity will not be propounded in this Note, because the attainment of that goal would be both impracticable and improbable. Instead, this Note will propose a means of clarifying, more precisely defining, and legislatively enlightening the area of software taxation to enable the potential software buyer to clearly determine the state and federal tax consequences of a software purchase. In short, this Note will propose a functional approach to software taxation. This approach will hopefully identify and clarify the problem areas of software taxation as well as provide the foundation for a more rational and comprehensive system of taxation than is presently in existence.

Under prior federal tax law, the use of tax preferences such as computer software deductions, depreciation, amortization, capitalization and the investment tax credit with respect to computer software was dependent upon the status of the software. In addition, developmental costs, bundling, unbundling and leasing costs were all treated separately.

The Internal Revenue Service (the Service) has attempted to develop a rational system for the taxation of computer software. Unfortunately, the result has been a series of piecemeal, stop-gap measures that have confused, rather than clarified the area.[34]

Currently, computer software placed into service after January 1, 1981, is subject to depreciation under the Accelerated Cost Recovery System (ACRS) set forth in section 168 of the Internal Revenue Code (the Code).[35] The purpose of the ACRS is to allow the purchaser of a capital asset an accelerated recovery of his expenditure. For ACRS purposes, the useful life of software is five years, unless the taxpayer either elects a longer period of depreciation, or can prove a shorter life to the Commissioner of Internal Revenue (the Commissioner). Note, however, that research and development costs can still be currently deducted under section 174 of the Code. Certain tax credits may also be available for research expenditures.[36]

On the state level, software taxation is even more confused. While most state courts treat software as intangible,[37] the majority of state tax administrators treat software as tangible[38] in order to

---

34. *See, e.g., infra* notes 35, 36, 53, 74, 78, 85, 87, 94, 98-99, 101 and 104.

35. I.R.C. § 168 (1982). All references to the Code are to the Internal Revenue Code of 1954, as amended.

36. *See* I.R.C. § 44F (1982); U.S. MASTER TAX GUIDE (CCH) ¶ 175H (1983) [hereinafter cited as TAX GUIDE].

37. *See infra* note 137.

38. *See infra* note 135.

apply state sales,[39] use[40] and personal property taxes.

The discrepancies between the various systems of computer software taxation create serious problems for a prospective software purchaser. Note, however, that if the discrepancies only arose when the federal system of software taxation was compared with the system used by a particular state, then there would not be much of a problem. A potential purchaser would simply have to determine which federal tax provisions would apply to his software purchase and which state provisions would apply to the same purchase. Unfortunately, such rationality does not reign within either the state or the federal systems. There are significant conflicts between the various judicial and governmental interpretations of the regulations and statutes which govern the taxation of software. A considerable controversy exists regarding which interpretations should be followed. A potential purchaser is left with the complicated task of determining for himself which interpretations to follow.

On the federal level, most potential buyers would probably like to be able to deduct as much of the software cost as possible,[41] depreciate the remainder as quickly as possible,[42] and still qualify for as much as possible of the investment tax credit. On the state level, a potential purchaser would profit from paying as little sales, use, or personal property tax on the software as possible. One may think that the potential buyer wants the best of all possible worlds. Further, one may question why this buyer should be entitled to special tax preferences, such as ACRS and the ITC, while other purchasers of tangible personal property are not so entitled and are forced to pay state sales, use and personal property taxes on their purchases. The reason for the software purchaser's unusual tax treatment, and

---

39. A sales tax is an impost on the consumption of commodities (tangible personal property), assessed upon transactions within the jurisdiction. 68 AM. JUR. 2D *Sales and Use Taxes* § 1 (1973). Sales taxes are imposed upon retailers for the privilege of selling tangible personal property at retail. The tax is not levied *directly* on the consumer, though it is imposed on the consumer. Sales taxes apply to gross receipts of retailers from the sale of the tangible personal property. CAL. TAX RPT. (CCH) ¶ 2302, at 409 (emphasis in original).

40. A use or compensating tax imposes a levy upon the use in the state of tangible personal property purchased outside the state. It is substantially complementary to the sales tax of particular jurisdictions, and is designed to discourage the loss of business within the jurisdiction because of the imposition of a local (state) sales tax. 68 AM. JUR. 2D *Sales and Use Taxes* § 1 (1973). The use tax is imposed upon the purchaser, though any retailer engaged in business in the state is required to collect the tax and remit it to the state. CAL. TAX. RPT. (CCH) ¶ 2302(a), at 410.

41. This could be done through I.R.C. § 174 (1982) research and development expenses.

42. Note that the taxpayer might be able to prove a useful life of less than five years, especially in light of the technological advances in computer software.

the cause of most of his problems, is tangibility. Most property buyers know before they buy whether the property will be considered tangible or intangible. Thus, the buyers also know, or can determine, what the state and federal tax consequences of the purchase will be. Not so with a software buyer. The buyer may think that his purchase will be treated as tangible,[43] only to discover after the fact that the purchase will be considered intangible in his state or jurisdiction. Only a software purchaser is confronted with this illusive question—is the software tangible or is it not? Although the answer is not readily apparent, this Note will propose that some software is tangible and some is not. By utilizing the functional approach proposed in this Note, a potential software buyer will be able to catagorize his software purchase and thus quickly determine the tax consequences of his purchase in any given jurisdiction.

Thousands of dollars in "questionable" taxes are collected each year as a result of the ambiguities and discrepancies that exist in the various state and federal systems of software taxation. At first blush this may seem like an inconsequential amount. However, when compared with the relative youth of the software industry and its past growth experience, the amount suddenly takes on significant proportions.

Every software purchaser/consumer is burdened by the lack of clarity and consistency in the tax treatment of computer software. The current problems with the federal and state tax law can be traced to the explosive growth of the software industry and the inability of state and federal tax agencies to adequately deal with that phenomena. If the agencies promulgated rational and comprehensive guidelines for software taxation as the industry was beginning to grow, then these problems would not exist now. At the very least, the agencies should update their regulations now that the potential size of the computer software industry is readily apparent.[44]

In order to understand the dramatic proportions of the software taxation crisis, a comprehensive analysis of the present controversies in the administrative, legislative and judicial arenas must be conducted on both the state and federal level. Once the proposed functional approach to taxation is applied to the problem areas, a semblance of rationality and consistency will result.

B. DEFINITION OF TERMS

This Note will deal with terms that are the subject of much con-

---

43. Current case law defines computer software as both tangible personal property, *see infra* note 136, and intangible assets, *see infra* note 134.

44. *See infra* notes 74, 95, 98-99.

fusion and misunderstanding in the general populace and even in the computer industry itself. As stated in the previous section, a significant problem in this area is the lack of clear definition for many important terms. While computer systems are generally composed of hardware and software elements,[45] the very use of those terms creates controversy since they "have no generally accepted definition and the distinction between them is unclear."[46]

For the purposes of this Note, "hardware" will be defined as the physical equipment itself, comprised of the CPU[47] and its associated pheripheral equipment.[48] Thus, hardware "may be seen and touched" and its design and "performance characteristics may be determined from descriptive literature and manuals."[49] Unfortunately, this definition does not entirely exclude some items that could otherwise be termed software.

Software, the other half of a computer, is something that lacks absolute definition. The Computer Dictionary and Handbook defines software as: "1. The internal programs or routines professionally prepared to simplify programming and computer operations . . . ; 2. Various programming aids that are frequently supplied by the manufacturers to facilitate the purchasers' efficient operation of the equipment. Such software items include various assemblers, generators, sub-routine libraries, compilers, operating systems and industry application programs."[50]

Some definitions of software are much broader than this and even go so far as to include everything that is not hardware.[51] Such a definition could include such non-programming elements as educational material, manuals, personnel training, and even hardware service and maintenance. "The term software is sometimes taken to mean all activities, process, and procedures surrounding the . . . computer; in this definition, it includes everything related to the computer except hardware."[52]

Computer software was defined by the Service in Revenue Procedure 69-21.[53] The Service definition is similar to the federally

---

45. There are, however, some hybrid exceptions, e.g., firmware, data base management systems. *See* Goetz, *supra* note 23, at 35-36.

46. Bryant & Mather, *supra* note 27, at 61.

47. *See supra* text accompanying note 5.

48. *See supra* text accompanying notes 6, 8.

49. *Software Industry Analysis*, in COMPUTER YEARBOOK 98 (1972). [hereinafter cited as *Industry Analysis*].

50. C. SIPPL & C. SIPPL, COMPUTER DICTIONARY AND HANDBOOK 499 (2d ed. 1972).

51. *Industry Analysis*, *supra* note 49, at 98.

52. Bauer & Rosenberg, *Software—Historical Perspectives and Current Trends*, 41 AM. FED'N OF INFORMATION PROCESSING SOC'Y. CONF. PROC. 993 (1972).

53. Rev. Proc. 69-21, 1969-2 C.B. 303, states in pertinent part:

adopted definition of software, which is a "set of programs, procedures, and possibly associated documentation concerned with the operation of a data processing system, e.g., compilers, library routines, manuals, and circuit diagrams."[54]

Some states are content with fairly broad definitions of software. New Jersey, for example, defines it as "property used to guide or control hardware and to cause the hardware to function. Software includes, but is not limited to, a set of programs, procedures and associated documentation concerned with the operation of a data processing system."[55]

Equally broad, though perhaps more definitive, is California's recent enactment[56] that defines software[57] as the "complete plan for the solution of a problem, such as the complete sequence of automatic data-processing equipment instructions necessary to solve a problem and includes both systems and application programs and subdivisions, such as assemblers, compilers, routines, generators, and utility programs."[58] California specifies that "custom computer programs" are those specially ordered by the customer including "services represented by separately stated charges for modifications to an existing prewritten program which are prepared to the special order of the customer."[59] California custom programs do not include "canned" or prewritten programs. Modifications to such programs are only considered custom programming to the extent of the modification.[60]

These extremes in definition leave both the reader and the computer industry without a satisfactory definition of computer

---

SEC. 2. BACKGROUND.

For the purpose of this Revenue Procedure, "computer software" includes all 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 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.

54. Federal Information Processing Standards, Pub. 11, §§ 1-3 (Dec. 1, 1970).

55. N.J. ADMIN. CODE tit. 18, §§ 24-25 (1979), *reprinted in* 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2d, N.J. No. 9 (1981). *See also* Heinzman, *supra* note 27, at 184.

56. A.B. 2932, 1982 Cal. Stat. ch. 1274, § 3 (adding § 6010.9 to, and amending § 7059 of the California Revenue and Taxation Code.

57. Note that this is software qua computer programs.

58. CAL. REV. & TAX. CODE § 6010.9(c) (West 1970 & 1983 Supp.).

59. *Id.* § 6010.9(d).

60. *Id.*

software.[61] To make matters more complicated, there are several different types of software and programs. Contemporary software includes both systems programs and applicational programs. Systems programs are operational programs that control the internal operations of the CPU and the peripherals when commanded to do so by either applicational programs or other systems programs.[62] Applicational programs interact with the user on a higher level and perform such functions as payroll billing or scientific work.[63]

To facilitate the reader's comprehension, the following definitions of software and firmware will be used for the purposes of this Note:

> "Software" will include programs (logical sets of instructions to the hardware) of the following two types: (1) Operational software[64]—those programs that enhance the efficiency of the hardware by controlling or supervising the processing of application programs. Operational programs control the hardware and actually make the machine run by translating information into a form usable by the equipment. Operational software are fundamental and necessary to the functioning of the computer hardware itself.[65] (2) Applications software[66]—those programs dealing "with the implementation of a system such as language compilers, general purpose utility programs and industry or other application programs."[67] Applications software also includes "programs concerned with specific tasks in the user's environment such as inventory control, payroll accounting, ·[and] accounts receivable."[68] Such programs represent the procedures or instructions the computer must perform in order to achieve the given objective.[69] References to software will include both types of programs in the generic sense. The auxiliary elements of some software definitions,

---

61. Davis and Blose, *Tax Treatment of Software Costs*, Bus. AUTOMATION, Feb. 1972, at 42.

62. *In re* Peripheral EDP Devices, Etc., 481 F. Supp. 965 (N.D. Cal. 1979). For a criticism of the systems/application dichotomy, see Engle, *Overview of Systems and Utility Software Packages*, COMPUTERWORLD, Sept. 17, 1980, at 65, 67.

63. *See* Engle, *supra* note 62, at 65, 67.

64. Also called systems control programs, basic software, or computer operational software. *See* Heinzman, *supra* note 27, at 184.

65. *Id.*

66. *Id.*

67. *Id.*

68. Note, *The Revolt Against the Property Tax on Software—An Unnecessary Conflict Growing Out of Unbundling*, 9 SUFFOLK UNIV. L. REV. 118, 122 (1974).

69. Heinzman, *supra* note 27, at 184.

educational material, manuals, training and service,[70] will be excluded from this definition.

"Firmware" will include: "Software that is stored in a fixed (wired-in) or firm way, usually in a read-only memory [ROM]. Changes can often only be made by exchanging the memory for an alternative unit."[71]

III. EXISTING LAW

A. FEDERAL LAW—GENERALLY

Initially, computer software manufacturers and buyers were given wide individual discretion in their tax treatment of software. This situation changed dramatically when the federal government responded to pressure from the various companies that had antitrust litigation pending against IBM when it announced that it would commence offering software in unbundled packages.[72] A further stimulus to federal action appeared to be generated by Service agents in New York who felt that there were possible tax discrepencies in the treatment of software and requested guidance from higher authorities.[73] In response, the Service's New York regional office issued a memorandum[74] which called for the capitalization of software costs "where significant."[75] The memorandum also disallowed any investment tax credit for software purchasers because "software is made up of intangible assets."[76] This memoran-

---

70. *See supra* notes 51-52.

71. W. SPENCER, COMPUTER DICTIONARY 63 (1977). *See also* C. SIPPL & C. SIPPL, *supra* note 5.

72. Bauer & Rosenberg, *supra* note 52, at 1003. At the time of the announcement, Control Data Corp., Data Processing Financial, and General Corp. (a corporation leasing company that purchased its computers from IBM and subsequently leased them out at a discount from IBM's price), Applied Data Research, Inc. (a software developer), and Programmatics, Inc. (a small software developer) all had antitrust suits pending against IBM. *See* Schmedel, *IBM Discloses Plan for Separating Its Computer and Services Prices*, Wall St. J., June 24, 1969, at 38, col. 3.

73. Bigelow, *Federal Software Taxation* 1 COMPUTER L. SERV. (CALLAGHAN) § 2-3.2, art. 1, at 2 (1972).

74. *Memorandum re Capitalization of Software*, 6 Computer L. Serv. Rep. (Callaghan) 1087 (Jan. 15, 1969) [hereinafter cited as *Memorandum re Capitalization*, superceded by Rev. Proc. 69-21, 1969-2 C.B. 303.

75. *Memorandum re Capitalization, supra* note 74. "Significant" was not defined. Query whether it is 10%, 40%, or more?

76. *Id.* at 1088. The ITC is a politically sensitive tool for economic stimulation. Generally, it allows taxpayers who make investments in certain types of tangible depreciable property to take a credit of 10% of their investment amount against that year's tax liability in which the investment was made. J. CHOMMIE, THE LAW OF FEDERAL INCOME TAXATION 197-98 (2d ed. 1973). The ITC is available for qualified investment in I.R.C. § 38 (1982) recovery and other depreciable property acquired and

dum marked the federal government's first pronouncement that it considered computer software as intangible. The label of intangibility has several ramifications.[77] First, anything labeled intangible cannot be depreciated.[78] Second, the ITC is unavailable to intangibles. For the first time, there was official Service recognition of the fact that "programs can outlast computer hardware since they can be compatible with the more advanced equipment."[79]

For purposes of clarification, business expenses are deductible if: (i) they are incurred in a trade or business of the taxpayer; (ii) they are not for long term items such as capital expenditures for property improvement;[80] and (iii) they are "ordinary and necessary."[81] Research and development costs may be deducted under Code section 174, though they *may* be capitalized if they are capital items. Items of indefinite useful life may be ratably amortized over sixty months or longer.[82] Items with definite useful lives over one year must be capitalized and may not be deducted.

Initially, administrative agencies attempted to deal with the tangible/intangible distinction and its foreseeable complications.[83] Unfortunately, these attempts were less than successful. While the tangible/intangible distinction plays an important part in federal tax considerations, very little research or discussion took place before software was branded as intangible.[84]

As a result of the New York memorandum, Washington began investigating the area of software taxation. On October 7, 1969, the Service issued Technical Information Release number 1021, which told agents that, effective October 27, 1969, their taxpayer examinations should be governed by the rules of Revenue Procedure 69-21.[85] Essentially, this procedure's definition of software was broad

---

placed in service or constructed during the tax year. TAX GUIDE, *supra* note 36, ¶ 1178.

77. *See supra* notes 27, 52, 73.

78. At that time, depreciation was governed by I.R.C. § 167, which allowed either the straight line or the double-declining balance method. Computer depreciation was later governed by CLADRS. *See infra* note 97. Recently, CLADRS was replaced by ACRS. *See infra* notes 100-01 and accompanying text.

79. *Memo re capitalization, supra* note 74, at 1088.

80. Note that such expenditures and improvements must be depreciated and amortized.

81. TAX GUIDE, *supra* note 36, ¶ 1040.

82. This rule does not apply if a patent is issued, because the unrecovered expenditure can thereafter only be recovered through depreciation deductions over the life of the patent. *Id.* ¶ 1048.

83. The court decisions which followed do not necessarily agree with the administrative determinations or guidelines.

84. The repurcussions of this will be discussed *infra*.

85. Rev. Proc. 69-21, 1969-2 C.B. 303-04, states in pertinent part:

enough to include everything from operating systems to applicational programs.[86] Further, if the taxpayer financed the research and development costs of the software, the costs could be expensed under Code section 174(a), since "the costs of developing software . . . in many respects so closely resemble . . . research and experimental expenditures . . . of section 174 . . . as to warrant accounting treatment similar to that accorded such costs under that section."[87] The Service decided not to disturb the taxpayer's treatment of costs incurred in developing software, either for its own use, or for sale or lease to others, as long as those costs were either consistently deducted under section 174(a) or *ratably* amortized over a five year period[88] under section 174(b).[89]

Bundled software was to be treated as part of the hardware and capitalized and depreciated over the life of the hardware.[90] Unbundled software, on the other hand, was to be treated as an intangible asset and its costs were "to be recovered by amortization deductions

---

SEC. 4. COSTS OF PURCHASED SOFTWARE.

.01 With respect to costs of purchased software, the Service will not disturb the taxpayer's treatment of such costs if the following practices are consistently followed:

1. Where such costs are included, without being separately stated, in the cost of the hardware (computer) and such costs are treated as a part of the cost of the hardware that is capitalized and depreciated; or

2. Where such costs are separately stated, and the software is treated by the taxpayer as an intangible asset the cost of which is to be recovered by amortization deductions ratably over a period of five years or such shorter period as can be established by the taxpayer as appropriate in any particular case if the useful life of the software in his hands will be less than five years.

SEC. 5. LEASED SOFTWARE.

Where a taxpayer leases software for use in his trade or business, the Service will not disturb a deduction allowable under the provisions of section 1.162-11 of the Income Tax Regulations, for rental.

SEC. 6. APPLICATION.

. . .

.03 For taxable years ending prior to the date of publication of this Revenue Procedure, the Service will not disturb the taxpayer's treatment of software costs except to the extent that such treatment is markedly inconsistent with the practices described in this Revenue Procedure. For the purpose of applying the preceeding sentence, the absence of any formal election similar to that required by section 174 of the Code, or the amortization of capitalized software costs over a period other than the five-year period specified in section 174(b) of the Code, will not characterize the taxpayer's treatment of such costs as markedly inconsistent with the principles of this Revenue Procedure.

86. Bigelow, *supra* note 73, at 5.

87. Rev. Proc. 69-21, 1969-2 C.B. 303. Once again, no basis was given for this decree.

88. If the taxpayer could prove a shorter useful life, it would be allowed. *See id.*

89. *Id.*

90. *Id.*

ratably over a period of five years,"[91] or over a shorter useful life if one could be established by the taxpayer. Leased software was to be deductible as rental payments under Treasury Regulation section 1.162-11,[92] which would free the taxpayer from having to deal with capitalization.

Taxpayer complications arise when the Service uses the word "ratable." The Service will not allow the taxpayer to use any form of depreciation other than straight-line depreciation when an asset has to be ratably amortized. Consequently, the benefits of declining balance, double-declining balance, or sum-of-the-digits depreciation were not available.[93] The financial consequences of this were quite significant. The Service's position on ratable amortization and straight-line depreciation was premised on their belief that software was an intangible. The Service did not indicate any basis for this determination of intangibility.[94]

Under Revenue Ruling 71-177,[95] the Service allowed an investment credit[96] to a taxpayer who bought a bundled computer in 1968, capitalized the entire cost of the computer (and software), and then deducted depreciation based on a four year useful life. The cost of the software was thus included in the computer price for purposes of depreciation under Code section 167 and the investment tax credit.[97]

Revenue Procedure 77-10[98] set forth the depreciation guidelines for computers and peripheral equipment. Under the procedure, the lower limit for the useful life of computers and peripherals was five years, while the upper limit was seven years. The asset guideline was six years.[99]

---

91. *Id.*

92. Treas. Reg. § 1.162-11 (1958).

93. Bigelow, *supra* note 73, at 6-7.

94. A further Service guideline was established in Rev. Rul. 71-248, 1971-1 C.B. 55, which held that a company could defer and amortize the costs of programming a new computer, which was purchased five years after their first computer, while still deducting the annual software costs of the old computer *if* the Commissioner approved of their written application to change their treatment of software from their former method to their proposed method. In essence, the Service allowed the taxpayer to treat the old computer as a separate project from the new computer in a manner more consistent with Rev. Proc. 69-21.

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

96. *See* I.R.C. § 38 (1982).

97. *See supra* note 94, at 5.

98. Rev. Proc. 77-10, 1977-1 C.B. 548. The Procedure established the class life asset dereciation range system (CLADRS) for information systems and data communications equipment. CLADRS was superceded by the Accelerated Cost Recovery System established by ERTA. *See infra* notes 100-01 and accompanying text.

99. Rev. Proc. 77-10, 1977-1 C.B. 550, states in pertinent part:

All of the federal procedures heretofore mentioned were superseded by the Economic Recovery Tax Act of 1982 (ERTA).[100] Under ERTA, section 168 of the Code was amended to provide that the Accelerated Cost Recovery System (ACRS)[101] would apply forthwith[102] to any and all capital equipment[103] put into service after January 1, 1981. As a result hardware must be depreciated over five years unless a shorter useful life can be successfully demonstrated to the Commissioner. The treatment of software is not so certain. Presumably the old regulations and procedures[104] might apply and the treatment of software would depend on its characteristics (bundled, unbundled, operational or applicational). In addition, if the software were treated as intangible, then ratable amortization would again apply since the useful life would be over one year.

[Asset Guideline Class] 00.12——Information Systems: Includes computers and their peripheral equipment used in administering normal business transactions and the maintenance of business records, their retrieval and analysis. Information systems are defined as:

1) Computers: A computer is an electronically activated device capable of accepting information, applying prescribed processes . . . with or without human intervention. It usually consists of a central processing unit containing extensive storage, logic, arithmetic, and control capabilities. Excluded from this category are adding machines, electronic desk calculators, etc.

2) Peripheral equipment consists of the auxiliary machines which may be placed under control of the central processing unit. Nonlimiting examples are: Card readers, card punches, magnetic tape feeds, high speed printers, optical character readers, tape cassettes, mass storage units, paper tape equipment, keypunches, data entry devices, teleprinters, terminals, tape drives, disc drives, disc files, disc packs, visual image projector tubes, card sorters, plotters, and collators. Peripheral equipment may be used on-line or off-line. Does not include equipment that is an integral part of other capital equipment and which is included in other CLADR classes of economic activity, i.e., computers used primarily for process or production control, switching and channeling.

Rev. Proc. 77-10 was slightly modified by Rev. Proc. 80-15, 1980-1 C.B. 618, which added: "and automating distributive trades and services such as point of sale (POS) computer systems" to the end of the last section.

100. Pub. L. No. 97-34, 95 Stat. 172 (1981) (codified at scattered sections of 26 U.S.C.). For an excellent summary of ERTA, see RESEARCH INSTITUTE OF AMERICA, THE RIA COMPLETE ANALYSIS OF THE '81 ECONOMIC RECOVERY TAX ACT (1981).

101. I.R.C. § 168 (1982).

102. ERTA became effective January 1, 1981.

103. Capital equipment is necessarily tangible personal property and ERTA applies only to tangible personal property.

104. Rev. Proc. 69-21, 1969-2 C.B. 303; Rev. Rul. 71-248, 1971-1 C.B. 55; Rev. Rul. 71-177, 1971-1 C.B. 5. The *Memorandum re Capitalization*, *supra* note 74, would not apply since it was superceded by Rev. Pro. 69-21. Rev. Proc. 77-10, 1977-1 C.B. 550, and Rev. Proc. 80-15, 1980-1 C.B. 618, would also not apply since they were superceded by ERTA.

B. FEDERAL CASES

The federal judiciary has had a limited exposure to software taxation with varying results.[105] From the courts' first experiences with computer programs to the present, the courts have been unsure of the exact definition, characteristics and value of computer software. Though *Hancock v. Decker*[106] was only a habeus corpus proceeding for a state prisoner, the Fifth Circuit still got its first exposure to the complexities of software litigation. In *Hancock*, the Fifth Circuit affirmed the Texas Court of Criminal Appeals' decision[107] that the defendant's theft of fifty-nine computer programs constituted felony theft since the programs had a "market value in excess of $50 each,"[108] rather than the $35 total value[109] that the defendant had asserted. The court found support in Article 1418 of Vernon's Annotated Texas Penal Code which defined property for purposes of theft sections as "all writings of every description, provided such property possesses any ascertainable value." Though the *Hancock* court did not directly address the issue of tangibility, the court did conclusively decide that there was more value to a program than the mere paper (or tape or disc) that it was printed (or punched or recorded) on.[110]

The first major case in the area of software taxation was *District of Columbia v. Universal Computer Associates, Inc.*[111] In this often cited case, the United States Court of Appeals for the District of Columbia determined that the two programs (one applicational and one operational) in a bundled system sale were insignificant aspects of the transaction[112] and thus not subject to the Washington D.C. personal property tax.[113] Though the court was cognizant of the difference between the two types of programs, the court did not see fit to treat them differently for tax purposes.

---

105. Greyhound Computer Corp. v. IBM Corp., 559 F.2d 488 (9th Cir. 1977); District of Columbia v. Universal Computer Associates, Inc., 465 F.2d 615 (D.C. Cir. 1972); Texas Instruments, Inc. v. United States, 407 F. Supp. 1326 (N.D. Tex. 1976), *rev'd*, 551 F.2d 559 (5th Cir. 1977).

106. 379 F.2d 552 (5th Cir. 1967).

107. Hancock v. State, 402 S.W.2d 906 (1966).

108. *Id.*

109. Valued as paper alone.

110. In the absence of an infringement of a federal constitutional right, the Fifth Circuit correctly deferred to, and was bound by, the interpretation of the state court regarding the applicability of their state criminal statute. *See* Hancock v. Decker, 402 S.W.2d at 906.

111. 465 F.2d 615 (D.C. Cir. 1972).

112. Once again, no definition of insignificant is given. *Id.*

113. 465 F.2d at 618. Like *Hancock*, this case deals with a state question handled in a federal court.

The *Universal* court analogized computer software to the cartoon mats in *Washington Times-Herald v. District of Columbia*,[114] which were held to be intangible personal property and thus not subject to District of Columbia sales tax. Though two different types of taxes were involved (personal property tax in *Universal* and sales tax in *Times-Herald*), the *Universal* court was more concerned with the nature of the transaction than the tax applied to the transaction. The *Times-Herald* court stated that the Times-Herald had bought the professional and personal services of the artist via the right to reproduce the impressions on the mats; "without that right the comic strip would be entirely worthless."[115]

The *Universal* court saw knowledge stored on punch cards (or magnetic tapes or discs) as a more discernable example of intangible intellectual property than the right to reproduce the artist's cartoons in *Washington-Times Herald*. In its attempt to "unbundle" the computer package that Universal bought from IBM, the court went through some mathematical calculations,[116] explained the uncertainty involved, described the contradictory evidence regarding the value of the hardware and software,[117] and finally decided that a fifty-fifty split between hardware and software was not unreasonable.[118] The court concluded that "with a different set of facts, King Solomon did no better in making a similar choice."[119]

The *Universal* court believed that the intangible information (knowledge) was the subject of the sale and it was merely incidental that these intangibles were transmitted by way of a tangible reel of tape which was not even retained by the user. The final result in *Universal* was that software was deemed an intangible and beyond the scope of personal property tax.[120]

Though *Hancock*, *Universal* and *Times-Herald* were federal cases, they each dealt with issues normally handled by state courts.[121] These state issues were the federal courts' first exposure to the problems inherent in software cases. The federal courts' handling of these matters is significant because their treatment of software could have served as a guide to subsequent federal court decisions.

---

114. 213 F.2d 23 (D.C. Cir. 1954).

115. *Id.* at 24.

116. *Universal Computer Assocs., Inc.*, 465 F.2d at 619.

117. *Id.*

118. *Id.*

119. *Id.* at 619-20, *citing* I *Kings* 3:16-28.

120. Note, *The Revolt Against the Property Tax on Software: An Unnecessary Conflict Growing Out of Unbundling*, 9 SUFFOLK U. L. REV. 118, 132 (1974).

121. For example, felony theft, personal property tax and sales tax.

Further federal court clarification came from *Texas Instruments v. United States* [122] in which Texas Instruments felt that they were entitled to an investment tax credit and use of the double-declining balance method of depreciation on the total cost of the field tapes, output tapes, and analog film used in conducting offshore seismic data collection. [123] Though the district court held for the government on alternate grounds, the court of appeals reversed and remanded on the issue of the tape and film's inclusion in section 38 tangible personal property and the subsequent availability of section 167 double-declining balance method of depreciation. [124]

The court of appeals premised their opinion on the perception that "property is intangible if its intrinsic value is attributable to its intangible elements rather than to any of its specific tangible embodiments." [125] Such was not the case in *Texas Instruments*. The *Texas Instruments* court found support in *Walt Disney Productions v. United States* [126] (*Disney I*) where master film negatives were held eligible for the 1962 investment tax credit. [127] The *Texas Instruments* court cited favorably the Senate Finance Committee's approval "that motion picture and television films *are* tangible personal property eligible for the investment credit." [128]

The government in *Texas Instruments* failed to realize that the value of the seismic data was *entirely* dependent on the existence of the tape and film. If the tape or film were destroyed, no readable

---

122. 551 F.2d 599, *rev'g* 407 F. Supp. 1326 (5th Cir. 1972).

123. In 1969, Texas Instruments' subsidiary, Geophysical Services, Inc. (GSID), conducted offshore seismic data collection through a sonar/computer process. The data collected was fed into a series of computers which produced a readable "picture" of the ocean floor's surface. These "pictures" were then licensed to oil concerns.

Though the sale of these seismic pictures generated only two percent of GSID's total sales volume, GSID expended $934,000 in 1968 and $2,244,000 in 1969 to produce them. Texas Instruments initially deducted these amounts as ordinary and necessary expenses on their consolidated returns for those two years. The Service determined that the amounts should be capitalized and then amortized over seven years with a 10% residual value. This suit ensued. *Id.*

124. The introduction of ERTA has eliminated the possibility of the § 167 double-declining balance method of depreciation for anything put into service after January 1, 1981. *See supra* text accompanying notes 97, 100.

125. Texas Instruments v. United States, 551 F.2d 599, 609 (5th Cir. 1977).

126. 327 F. Supp. 189 (D. Cal. 1971), *aff'd*, 480 F.2d 66 (9th Cir. 1973), *cert. denied*, 415 U.S. 934 (1974).

127. Further support for *Texas Instruments* was found in Walt Disney Productions v. United States, 549 F.2d 576 (9th Cir. 1976) (*Disney II*), which completely upheld the Ninth Circuit's prior decision in *Disney I* regarding Disney's right to claim an investment credit on the *entire* basis of its motion picture films.

128. S. REP. No. 437, 92d Cong., 1st Sess. 34, *reprinted in* 1971 U.S. CODE CONG. & AD. NEWS 1918-41.

picture could be made or sold. Consequently, "the basis of the tangible tapes and films must include the costs of collecting seismic data and recording it on the tangible property with the result being an asset constituting 'tangible personal property.' "[129] The government admitted that the tapes were "tangible." It is clear that their intrinsic value stemmed from the seismic information thereon and did not exist as property separate from the physical manifestation.

In *Security Bank of Idaho v. Commissioner of Internal Revenue*,[130] though the court did not make any comprehensive findings regarding software characteristics, the court did hold that a bank's payment of a $12,500 fee to the BankAmericard Service Corporation was deductible under Code section 162(a) even though divided into a $5,000 segment alloted to operating manuals, program marketing "know-how" and motivational programs; the remaining $7,500 was allotted to the costs of the computer program and all that it comprised.

In a strong dissent, Judge Duniway felt that the computer program was a capital asset under the "separate and identifiable asset test" of *Colorado Springs National Bank v. United States*,[131] and consequently should be amortized over its useful life.[132] He analogized the "deck of cards" of a program to a player piano roll which would have to be amortized (as would the player piano) over its useful life (though a person hired to play the piano "live" or to put in the piano rolls would be a necessary and ordinary expense and fully deductible under section 162(a)).

The judge further observed that the banks involved with Bank Americard Service Corporation did not buy a new program every year but continued to use the same program for five years. The buying of the original computer program was not a "recurring expense" as used in *Colorado Springs*.[133]

C. The State Law—Generally

Prior to the IBM unbundling announcement in 1969,[134] very lit-

---

129. *Texas Instruments*, 551 F.2d at 611.

130. 592 F.2d 1050 (9th Cir. 1979).

131. 505 F.2d 1185 (10th Cir. 1974). Further support for *Colorado Springs* is found in First Nat'l Bank of S.C. v. United States, 558 F.2d 721 (4th Cir. 1977), and Iowa-Des Moines Nat'l Bank v. United States, 68 T.C. 872 (1977). Though cited by the opposition in *Colorado Springs*, nothing in Commissioner v. Lincoln Savings & Loan Ass'n, 403 U.S. 345 (1971) (additional premium paid to FSLIC was held to be capital rather than a § 162 ordinary and necessary expense) is contrary to these decisions.

132. *Security Bank of Idaho*, 592 F.2d at 1053 (Duniway, J., dissenting).

133. 505 F.2d at 1192.

134. *See* Goetz, *supra* note 23.

tle attention was paid to whether software was taxable as an entity onto itself. At this point, nearly every state administrator agreed that a computer system (including its software) was hardware and as such was tangible and taxable for sales, use and personal property tax purposes where applicable.[135]

Though state and local tax departments considered software as tangible,[136] taxpayers received more favorable treatment in state courts where unbundled software was characterized as an intangible and consequently was exempt from sales, use and ad valorem personal property taxes.[137] Once favorable treatment was encountered in the courts, tax assessors began to feel threatened. As a consequence of the IBM unbundling decision and subsequent state court decisions, state and local tax assessors could envision a sizeable chunk of their tax rolls disappearing as more and more software was separated from hardware.

D. STATE TAXING AGENCY DECREES

A survey of several of the more heavily industrialized[138] states will show the diversity that exists in the various state taxing agency treatments of software. While a general trend can be observed among the state taxing authorities, that same trend is not necessarily mirrored in the court decisions of those same states. Why is this so? A possible explanation is that the state taxing agencies are more concerned about the size of their coffers than either promulgating statutes which follow established tax policy considerations or amending their practices to keep astride of the modern technological advancements (such as software) which may necessitate modi-

---

135. *See generally* 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2c, 2-3.2d (1979) (responses to a survey of state revenue departments).

136. To the benefit of their tax roll and eventually to their citizens.

137. *See* District of Columbia v. Universal Computer Assocs., 465 F.2d 615 (D.C. Cir. 1972); State v. Central Computer Service, 349 So. 2d 1160 (Ala. 1977); Honeywell Information Systems, Inc. v. Maricopa County, 118 Ariz. 171, 575 P.2d 801 (Ct. App. 1978); Sacramento v. Assessment Appeals Board, 32 Cal. App. 3d 654, 671, 108 Cal. Rptr. 434, 446 (1973) (data processing leases to a tax-exempt lessee were tax exempt to lessor); Honeywell Information Systems, Inc. v. Board of Assessment Appeals, 7 Computer L. Serv. (Callaghan) 486 (D.C. Colo. 1975) (bundled software constituted non-taxable intangibles exempt from property tax); Nova Computing Service v. Askew, 6 Computer L. Serv. Rptr. (Callaghan) 18 (Fla. Div. Admin. Hearings 1976) (conversion of data from written to computer-readable format was a service and not tangible property and thus exempt from sales tax); *In re* Puritan Life Ins. Co., 7 Computer L. Serv. Rep. (Callaghan) 481 (R.I. Tax Div. 1979) (introduction of application of program into computer was a service and thus not subject to use tax); Commerce Union Bank v. Tidwell, 538 S.W.2d 405 (Tenn. 1976); First National Bank of Fort Worth v. Bullock, 584 S.W.2d 548 (Tex. Civ. App. 1979).

138. Hence more likely to make greater use of computers.

fied tax treatment. On the other side of the coin are the courts that attempt to interpret the statutes[139] in light of the applicable precedent.

The general state taxing trend is to treat all software as tangible and thus subject to a state's sales, use and personal property tax.[140] A significant number of states exempt custom software from taxation.[141] A number of states allow individual counties to decide property taxation for software as they see fit.[142]

In 1973, California began taxing the storage media[143] of basic operational programs.[144] As such, applicational programs were tax-exempt. In doing this, California moved away from a tangible/intangible approach to property taxation and moved toward a program functional approach.

In 1974, the California State Board of Equalization promulgated Rule 152,[145] which stated that a bundled computer sale was fully taxable regardless of its program characteristics or composition *unless* the taxpayer specifically identified the alleged nontaxable components of the package. Any itemization of unbundled packages served as evidence of the value of that particular component. Thus the onus was placed on the buyer/taxpayer to request (if possible) that the seller itemize the purchase and specify those components which could be considered nontaxable software.[146]

Illinois' position was somewhat different in that while they lev-

---

139. However ambiguous or lacking in proper, adequate or comprehensive legislative history.

140. Alabama, Arkansas, Colorado, Connecticut, Idaho, Indiana, Kansas, Maine, Mississippi, Oklahoma, South Carolina and Virginia. *See generally* 2 COMPUTER L. SERV. (CALLAGHAN) § 2-3.2c, 2-3.2d (1981).

141. District of Columbia, Florida, Iowa, Maryland, Minnesota, Nebraska, Vermont and Wyoming. Some states, e.g., Louisiana, Nevada, Rhode Island, South Dakota and Wisconsin, only exempt custom software if it is in a form other than program instructions, such as on coding sheets. *See generally id.*

142. Alaska, Arkansas, Montana and North Carolina. *See generally id.*

143. Storage media include, but are not limited to, punched cards, tapes, discs, or drums on which computer programs may be embodied or stored.

144. A basic operational program is defined as a computer program which is fundamental and necessary to the functioning of the computer. Included in the definition are those parts of an operating system that encompass supervisors, monitors, executives and control or master programs (which consist of the control program elements of that system). The taxation scheme was authorized by A.B. 69 (Taxation of Computer Media, 1973 Cal. Stat. ch. 990), which amended CAL. REV. & TAX. CODE § 995 (West 1970), and repealed § 3 of ch. 165 of the statutes of 1972.

145. *See* PROPERTY TAX DEP'T, CAL. STATE BD. OF EQUALIZATION, 1974 REVISION OF RULE 152, SUBCH. 2, ART. 3.5.

146. It appears that any software *not* characterized as operational programs could be tax exempt. This could leave ample room for software misclassification to escape the tax liabilities.

ied a basic sales tax on hardware and software "of general use,"[147] they also imposed a "Service Occupation Tax"[148] on software that was "made to the special order of the user and has use or value to no one other than the user."[149]

Michigan follows the general state trend[150] of treating software as tangible personal property,[151] but treats custom-made software as a nontaxable service.[152]

New York paved the way for a very detailed treatment of software taxation[153] and decided that software would be considered intangible and thus exempt from sales tax. Shortly after New York passed its statute, New Jersey followed suit with a nearly identical statute. Both New York and New Jersey exempted software if either: (1) the preparation or selection of the software requires an analysis by the vendor of the suitability of the program to the customer's needs; or (2) the program requires adaptation or modification by the vendor in order to be used in the buyer's specific environment (i.e., the customer's particular make or model of computer or output device).[154]

The regulation futher clarifies that "[s]oftware may be in the form of systems programs (except for those instruction codes which are considered tangible personal property),[155] application programs, or pre-written programs (canned) that are either systems or application programs, or custom programs."[156]

Finally, both New Jersey and New York considered software in its many forms, "whether placed on cards, tapes, disc pack or other machine readable media, or entered into a computer directly,"[157] to

---

147. *See* 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2d, Ill. No. 3 (1979) (letter from Ill. Dep't of Rev.).

148. *Id.*

149. *Id.*

150. For a review of the general trend, see 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2c, 2-3.2d (1980) (responses to a survey of state revenue departments).

151. 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2d, Mich. Nos. 1, 3 (1979) (letters from Mich. Dep't of Treas.).

152. *Id.*

153. 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2d, N.Y. No. 5 (1979).

154. *Id.* at N.J. No. 7.

155. Instruction code means "the internalized instruction code which controls the basic operations (that is, arithmetic and logic) of the computer causing it to execute instructions contained in application and system programs, and an integral part of the computer. It is not normally accessible nor modifiable by the user. Such an internal code system is considered part of the hardware and is taxable. The fact that the vendor does or does not charge separately for it is immaterial. *See* 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2d, N.J. No. 9 (1979).

156. *Id.* at N.J. No. 7.

157. *Id.*

be intangible personal property for sales and use tax purposes.

Pennsylvania differentiates between operating programs[158] and applied programs but still taxes the total price of the sale or lease of both of them.[159] The state also taxes separately stated charges for instructional material, de-bugging services and instruction time.[160]

Smaller states have also tried to deal with the software taxation area. Arizona's definition of personal property includes "property of every kind, both tangible and intangible, not included in the term real estate."[161] Arizona's legislative intent is to tax all personal property *unless* that property is subject to a specific exemption which the taxpayer must prove.

Texas levies sales, excise and use taxes on software without regard to the type of program.[162] While canned or prepackaged programs are subject to the taxes when sold, leased or rented,[163] "programming services," which allow customers to either generate their own new programs or improve their existing programs, are not taxable.[164]

Regarding property tax, if the tax is determined by the state, then the state will usually treat software in the same manner for sales and use tax purposes. However, if the property tax is determined by the counties, then the tax is more difficult to ascertain. Usually, however, the tax treatment will follow the state's treatment of software in the sales and use tax areas.

E. STATE COURT DECISIONS

The Texas courts have taken a different view of the taxation of software. In *First National Bank of Fort Worth v. Bullock*,[165] the court held that purchases of programming instructions on magnetic tape were exempt from sales tax because they were not sales of tangible personal property. In so deciding, the court used the *Bullock v. Statistical Tabulating Corp.*[166] "essence of transaction" test, which

158. Operating programs are defined as the "programming system or technical language designed either for application in a specialized use, or upon which a plan for the solution of a particular problem is based. Typically, applied software programs can be transferred from one computer to another via tapes, discs or cards. *Id.* at Pa. No. 1.

159. *Id.*

160. *Id.* The subsection goes as far as including "those situations where the lessor or vendor sells or leases the program only in book form."

161. ARIZ. REV. STAT. ANN. § 42-201(6) (1980).

162. 2 COMPUTER L. SERV. (CALLAGHAN) app. 2-3.2d, Tex. No. 8 (1980).

163. *Id.*

164. *Id.*

165. 584 S.W.2d 548 (Tex. Civ. App. 1979).

166. 549 S.W.2d 166 (Tex. 1977) (data processor's translation of raw data into com-

states that if "the object or essence of the sale is intangible property then the transaction is not taxable."[167] In applying this test, the court of appeals held that the essence of the transaction was not the four tapes but rather the purchase of the computer process—which constituted an intangible.[168]

The court's reasoning was buttressed on the belief that the information could have been transferred to the computer in several ways, e.g., by telephone or by hand. The court also relied on *Statistical Tabulating's* holding that the processed data contained in a coded computer card was an intangible and not taxable.[169] Bullock, the Comptroller of Public Revenue, attempted, without success, to convince the court that a distinction should be drawn between the "customized" software in the *Statistical Tabulating* case and the "canned" software involved in the *First National* case. Nevertheless, the court was unpersuaded by his arguments.

Though the Arizona legislature has long authorized the taxation of intangibles, the Arizona courts have held that intangibles cannot be taxed because of the absence of a method of equalization for, or collection of, taxes on intangibles.[170]

In *Honeywell Information Systems, Inc. v. Maricopa County*,[171] the court cited *District of Columbia v. Universal Computer Assocs., Inc.*,[172] *Sacramento v. Assessment Appeals Board*,[173] and *Greyhound Computer Corp. v. State Department of Assessments and Taxation*[174] as cases clearly showing that computer software is intangible and should therefore be excluded from the value of tangible computer equipment. Honeywell, as a "bundled" systems seller, was allowed to deduct, as intangible personal property, the value of their software from the overall price of the computer equipment that they sold. This left only the value of the tangible computer equipment sold, i.e., the hardware.

Similarly, in *Honeywell Information Systems, Inc. v. Board of*

---

puter perceptible data did not involve the sale of tangible personal property and thus was not subject to sales tax).

167. *Id.* at 168.

168. First National Bank of Fort Worth v. Bullock, 584 S.W.2d at 550.

169. *Id.*

170. *See* Brophy v. Powell, 58 Ariz. 543, 121 P.2d 647 (1942) (mortgages as intangibles were not subject to property tax); State Tax Commissioner v. Shattuck, 44 Ariz. 379, 38 P.2d 631 (1934) (intangible Property Tax Act declared invalid as denying due process).

171. 118 Ariz. 171, 575 P.2d 801 (Ct. App. 1977).

172. 465 F.2d 615 (D.C. Cir. 1972).

173. 32 Cal. App. 3d 654, 108 Cal. Rptr. 434 (1973).

174. 271 Md. 674, 320 A.2d 52 (1974).

Assessment Appeals,[175] Honeywell's bundled computer packages were exempted from taxation as a result of their intangible personal property nature.[176] Judge McClean relied on *Greyhound* and *Universal* in deciding that the software components of the computer package were intangibles and properly separable from the computer package bundle.

Alternatively, Maryland applies sales and use taxes to systems/operational programs. In *Greyhound*,[177] the Maryland court felt that much of computer software consists of services, which are intangible in nature and thus beyond the reach of personal property tax. Accordingly, the court allowed Greyhound to separate the value of their computer system package and exempted the software from taxation.

While Florida exempts custom software from taxation, in *Management Data Corporation v. Dade County, Florida*,[178] the court ruled in favor of the County in what appeared to be an administrative mistake. The judge did state, however, that "software is not taxable as tangible property if it can be shown by proper method what portion of the system is personnel, training, and other operating services, etc."[179]

In *Commerce Union Bank v. Tidwell*,[180] the Tennessee Supreme Court held that the sale of computer software does not constitute the sale of tangible personal property for purposes of state sales and use tax. The magnetic tapes or punch cards were merely incidental to the intangible knowledge and information stored in the tapes and cards. Once that knowledge was transferred into the computer and the tape returned or punch cards destroyed, the intangible knowledge and information was all that was left and thus all that had actually been purchased.[181]

In trying to distinguish *Crescent Amusement Co. v. Carson*,[182] which held that the film was inherently related to the movie, the court felt that magnetic tapes and cards were not crucial elements of software since a program's information could be transmitted orally or electronically without "any tangible manifestations of

---

175. 7 Computer L. Serv. Rep. (Callaghan) 486 (D.C. Colo. 1975).

176. COLO. REV. STAT. § 39-9-101 (1973).

177. 271 Md. 674, 320 A.2d 52 (1974).

178. No. 69-2095 (11th Cir. Dade County, Fla. May 4, 1971).

179. *Id.*

180. 538 S.W.2d 405 (1976).

181. *Id.* at 407.

182. 187 Tenn. 112, 213 S.W.2d 27 (1948) (tax was levied on the rental of a motion picture film).

transmission."[183] The *Tidwell* court appears to have agreed[184] with a 1972 statement to the California State Board of Equalization.[185]

Tidwell, the Tennessee Revenue Commissioner, did not tax appellant's programs, which were fed into computers through interstate telephone lines. The court viewed this method of transmission as clearly constituting the purchase of intangible personal property. Though it recognized that the program information could have been fed into the computer through telephone lines or inputted directly by the program's originator, the court failed to apply this analogy to their *Crescent* example whereby a motion picture could also be transmitted through telephone lines, satellites or even performed live by the original actors.[186]

In response to *Tidwell*, the Tennessee legislature statutorily reversed the decision, then shortly thereafter repealed the new legislation, leaving *Tidwell* as the law in Tennessee in the area of sales tax on computer programs.[187]

Alabama subjects all software to state sales and use tax. In *State v. Central Computer Services*,[188] the Alabama Supreme Court was faced with the question of whether computer software constituted tangible personal property for the purposes of the state use tax. A reading of the applicable statute would appear to answer this question in the affirmative. Nevertheless, the court thought otherwise. The majority's reasoning closely paralleled that of *Universal* and *Tidwell*. The court also distinguished *Boswell v. Paramount Television Sales, Inc.*,[189] and stated that:

> magnetic tapes and punched cards are distinguishable from movie films. In *Boswell*, the court noted that the right to publish or broad-

---

183. Commerce Union Bank v. Tidwell, 538 S.W.2d at 407-08.

184. Possibly without even knowing so!

185. "Film is a crucial artistic element of the motion picture; without film there could be no movie. But tapes and punched cards are not a crucial element of software; or indeed a part of software at all; without them, there could still exist the whole of software which could be transmitted orally." Business Manufacturer's Ass'n, Statement to the State of Cal. State Board of Equalization regarding Proposed Rule 32 (Jan. 18, 1972). See also Boswell v. Paramount Television Sales, Inc., 291 Ala. 490, 282 So. 2d 892 (1973), where the Alabama Supreme Court held that the rental and leasing of films constituted rental or leasing of tangible personal property and was properly subject to state license taxes. The court did not find any difference between the money paid for the actual films and the money paid for the right to use the films. *Id.*

186. This criticism would similarly apply to *Universal Computer Assocs., Inc.*, 465 F.2d at 615.

187. *See* COMPUTER LAW & TAX REP., Feb. 1978, at 5-6; COMPUTER LAW & TAX REP., May 1978, at 7.

188. 349 So. 2d 1160 (Ala. 1977).

189. 291 Ala. 490, 282 So. 2d 892 (1973). *See supra* note 185.

cast the motion picture was physically inseparable from the movie film itself. The physical presence of the movie film is essential to broadcasting the intengible artistic efforts of the actors. However, in the present case, the physical presence of magnetic tapes and punched cards is *not* essential to the transmittal of the desired information from its creator. . . . Testimony in the present case indicates that this information can also be telephoned to the computer or brought into Alabama in the mind of an employee of [the licensor]."[190]

The dissent in *Central Computer* pointed out that films can be transmitted by telephone lines or radio waves like computer programs. Furthermore, the actors could appear in person.[191]

IV. CRITIQUE OF FEDERAL AND STATE LAWS

The basic problem with the federal and state treatment of software taxation is the inconsistency and lack of certainty that permeates the area. While this Note does not argue that a nationwide uniform treatment of software taxation is mandated, this Note does posit that the status quo is unjustified in light of the differences that exist between the federal government's or a given state's taxing authority and courts.

While Revenue Procedure 69-21[192] characterizes unbundled software as an intangible, it allows purchasers of bundled software to include those costs together with the costs of the associated hardware. Consequently, in order for a purchaser to gain any tax benefits under the Procedure, the purchaser must buy software from one of the few companies that still sells bundled packages. This clearly discriminates, without any justification, against the majority (and by far the largest in size and sales) of companies who manufacture software and hardware.

As has been previously stated, the enactment of ERTA resulted in the invalidation of most of Revenue Procedure 69-21. Unfortunately, it is not possible to ascertain just how much of the Procedure survived. The ratable amortization of unbundled software over a five year period, as set forth in the Procedure, is not altogether dissimilar in effect to ERTA's procedures. Clearly, however, the double-declining balance and sum-of-the-years'-digits methods of depreciation are no longer available to the computer software purchaser.

---

190. State v. Central Computer Services, 349 So. 2d at 1162.

191. Surely the majority had heard of or seen both the film version and the stage (live) version of "West Side Story," "The King and I," "Annie," or "Jesus Christ Superstar."

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

While software purchasers may not receive favorable treatment under current Service procedures, they probably will be given better treatment in federal court. Why? Unfortunately, it is not because of any rationally calculated or comprehensible plan. Since ERTA contains the only federal tax preferences available to software purchasers, one would think that the tax consequences of the Act would be easily ascertainable. This does not appear to be the case. The federal courts have yet to interpret software taxation in light of ERTA. Given the state of confusion that exists in the Service's positions, one can only speculate hopefully regarding the federal courts' response.

On the state level, the situation is more chaotic than on the federal level. The states fall into one of our possible catagories regarding sales and use taxation: (1) tax *all* software as tangible goods;[193] (2) tax all software and exempt custom programs unless they are in a form other than instruction programs on coded sheets;[194] (3) tax all software and exempt application programs;[195] or (4) exempt all software as an intangible.[196] On the property tax level, the states either follow one of four methods or allow their counties to decide the appropriate taxation on a county-by-county basis.[197]

In many of the state jurisdictions, a purchaser would not be able to ascertain the tax consequences of his software purchase before the fact. Is this in itself a problem? Apparently so, especially in the context of a purchaser who maintains computers in several states and needs to supply them with software. The actual purchase of the software may only present problems in the state where purchased.[198] However, further problems could present themselves when the software is transferred to other states and consequently is subject to their individual use taxes.[199] Thus, the state courts' decisions reversing existing statutory treatment and exempting software from taxation[200] are as consistently inconsistent as the federal treatment has been in the past.

On a conciliatory note, neither the federal judiciaries, the state

---

193. *See supra* note 141.

194. Louisiana, Nevada, Rhode Island, South Dakota and Wisconsin. *See generally* 2 COMPUTER L. SERV. (CALLAGHAN) § 2-3.2c, 2-3.2d (1981).

195. District of Columbia, Florida, Iowa, Maryland, Minnesota, Nebraska, Vermont and Wyoming. *See generally id.*

196. Arizona and Oregon. *See generally id.*

197. Montana and North Carolina. *See generally id.*

198. Particularly in a state where the state tax department's application of sales tax differs from the state court's interpretation of the statute and precedent.

199. Once again this problem multiplies *ad infinitum* if the state's tax department and courts do not agree on the application of the use tax to software.

200. *See supra* note 137.

judiciaries, legislatures or tax agencies are singularly to blame[201] for the inconsistent treatment of software. Software as a phenomona is unique. There has never been anything which eludes the tangible/intangible distinction quite like software. Consequently, no one is quite sure how to handle it. The history of judicial, legislative and agency treatment is analogous to "Three Blind Mice." Had the authorities been more comprehensive at the outset in trying to understand the characteristics and future of software, perhaps many of these problems would be nonexistent.[202]

V. PROPOSAL

At this juncture, any semblance of rationality and comprehensiveness would be a significant contribution to the muddled area of software taxation. This Note will now undertake that challenge.

It should be apparent that the tangible/intangible distinction has played an important role in both agency and judicial determination of software taxation. Unfortunately, this dichotomy is impracticable since the courts have failed to render any decisive opinions; the United States Supreme Court has yet to enter the controversy, and the state legislatures are lax to make any significant progress in the area.

The tangibility issue may have been settled—at least to some degree—by courts who have dealt with whether software constitutes "goods" under the Uniform Commercial Code (the "U.C.C."). Most courts have concluded that software is subject to the provisions of Article 2 of the U.C.C.[203] If these cases had conclusively established that *all* software[204] was tangible then the problem would be alleviated.[205]

The easiest solution would be for Congress to legislatively declare that all systems/operational programs and firmware would be subject to the investment tax credit and ACRS and that applica-

---

201. Though they each deserve a fair amount.

202. Analogies to film, player piano rolls, and cartoon mats are helpful but they have not progressed to the extent that software has and will.

203. *See* Note, *Computer Software as Goods Under the U.C.C.*, 77 MICH. L. REV. 1149 (1979). *See also* Triangle Underwriters, Inc. v. Honeywell, Inc., 457 F. Supp. 765 (E.D.N.Y. 1978) (the court observed that the purchase of custom software was more accurately characterized as a purchase of "goods" than of "services"); Chatlos Sys. v. National Cash Register Corp., 479 F. Supp. 738 (D.N.J. 1979); Davidson, *Negotiating Major System Procurements*, 3 COMPUTER/L.J. 385, 401 n.31 (1982).

204. Or some defineable portion thereof (e.g., systems or canned).

205. At least on the federal level and most probably in all states following the U.C.C. (though some doubt remains).

tional programs could be amortized over their useful life.[206] On the state level, the state legislature could enact legislation stating that systems/operational programs and firmware are goods (as under the U.C.C.) and subject to all of the applicable regular taxes (sales, use and personal property) on goods, and that applicational programs are not goods and thus not subject to those taxes. Alas, the easiest solution may not always (or ever) work.

If software is viewed from a functional perspective, what is the result then? To answer this, the approach taken by California will be a good starting point.

California has decided to tax only basic storage media,[207] including systems/operational programs.[208] California has made the decision to exempt applicational programs from its tax structure. The theory behind this exclusion is that taxation of applicational programs would have a detrimental effect on research and expansion of business activity within the state. Hence, by legislative fiat, California has sidestepped the tangibility issue[209] and decided that "what is good for IBM is good for California." Some might think that a viable middle-ground solution has finally been found,[210] but unfortunately that is not the case.

California's decision is only an intermediate step at best. While it does solve many problems of definition and line-drawing, it exhibits the same lack of foresight that created all of the problems in the last two decades. If one looks back at the early years of computers, there was hardware and nothing else, then came unbundling and software, and then came the confusion. What was once hardware was swallowed up by software, which in turn was swallowed up by the operational/applicational split. Informed public officials with reasonable foresight could have averted many of the present problems. Only educated guesses can be propounded, however, as to where it will go from here.

Presently the delineation between operational and applicational programs is fairly explicit.[211] Unfortunately, the demise of this

---

206. Whatever that may be!

207. *See supra* note 143.

208. *See supra* notes 146 and 158.

209. The tangibility issue may be viewed as a needless and artificial legal construct which serves no beneficial purpose in the area of computer software (or possibly in any area for that matter). Some would argue that the tangible/intangible question is of paramount importance. Those that think so may also never be able to interject any semblance of rationality into the area of computer software taxation. This author believes that California's method of disregarding the tangibility issue is the most practicable.

210. *See* Note, *supra* note 120, at 137-39 (1974).

211. *See supra* notes 64-69 and accompanying text.

clear-cut demarcation is on the foreseeable horizon. With the introduction of firmware (i.e., micro-programming) comes an entirely new wave of problems.

Firmware is the middle ground between operational and applicational programs, though it can be as integral to the computer as a systems program. Firmware does have some inherent drawbacks in its ease[212] of compatibility and interchangeability with computers. Firmware cannot necessarily be "plugged-in" to a computer as easily or as cheaply as software.

Situational problems will arise regarding where firmware belongs, i.e., in the hardware/operational program side of computers or in the applicational program side? This author believes that firmware is more closely related to operations programs and thus should be placed on the hardware/operations program side of this controversy.

It is not inconceivable that a purchaser will be able to facilitate his tax planning by buying an applicational program rather than operational programs or firmware (both of which may be able to perform basically the same tasks in many instances). This does not seem to be consistent with good tax policy since it serves as a stimulus for taxpayers to buy application programs rather than operational programs or firmware, and thus rearranges taxpayers' priorities. A possible justification for this would be to encourage expansion of the software industry through research, design, and production of new application programs to the benefit of both the public and private sectors.

California's legislative fiat has paved the way for Congress to make an important policy decision. Congress could legislate that systems/operational programs and firmware will be treated as part and parcel of the computer for ACRS and investment tax credit purposes. As an interesting stimulus to technology and development, applicational programs could be deemed totally exempt from ACRS or other methods of depreciation and eligible for current deduction under Code section 174.

Since the states have been troubled by more contradictions than ever existed on the federal level, the states would be wise to heed the proposed initiative undertaken by the federal government and explicitly delineate precisely what constitutes systems/operational programs, applicational programs and firmware.

Since it would be impracticable for a nationwide uniform treatment of software taxation to be implemented, this Note realistically posits that the states must be given a choice. Recognizing the diver-

---

212. Or lack thereof.

sity that exists in the various states' needs from, access to, and relationship with the software industry, it would be illogical for a state like Nevada to be forced to tax software in the same manner as New York. Further, each state should be able to decide how they wish to structure their tax base and what items should or should not be taxed.

The states need not necessarily follow the federal government's lead and make a systems/operational, firmware versus application split. Instead, each state could independently decide whether to accept this split or reject it and thereby tax *all* software and firmware. State autonomy in this area has and should continue to be the rule.

By exempting applicational programs (as California did) research and business would not be seriously retarded[213] and the state and federal coffers would not suffer substantially.

A. PROPOSAL JUSTIFICATION

The prime attributes of this proposal are its simplicity, feasibility and certainty.

On the federal level, the software purchaser will probably want to buy his software in applicational program format, rather than operational programs or firmware, to take advantage of its current deductibility. The remaining functions of the buyer's computer that must be handled by operational programs or firmware will be subject to ACRS and the ITC.

The buyer is now in a better financial position due to the increased number of deductions available. The software industry is the primary beneficiary of the favorable treatment given to applicational programs, but the public and private sectors are also substantial secondary beneficiaries. State and federal governments are in the best position to determine exactly what the tax consequences of software purchases should be, and to accurately assess the situation to make the appropriate legislative or tax code adjustments. After the appropriate legislative action is taken, the judiciary will undoubtedly have a chance to interpret and apply the new legislation to taxpayer's cases. In light of the past state and federal judicial treatment of the relevant cases, this proposal should satisfy both the needs of the state and federal taxing agencies, and the propensities of the judiciary to hold that some part of software is intangible and exempt from taxation.

---

213. Quite the contrary, research and business would benefit from this incentive to produce newer and better application programs.

VI. CONCLUSION

For the first time, by implementing this proposal, the computer software purchaser/taxpayer would have the opportunity and ability to decide with certainty how his computer software purchase will be treated on the federal and state levels. The purchaser can conduct a market survey to determine which companies can best serve his substantive and tax needs in operational and applicational programs and firmware. Some fairly simple calculations could then be conducted on the difference between the state and federal treatment of firmware and applicational programs (assuming they both can accomplish the same desired task) to show the purchaser his options. The buyer then can make an informed decision and know exactly what the future benefits and liabilities will be.

On the other side of the transaction, the state and federal governments will similarly know what future revenues will be given projections of software purchases and a breakdown of which type of software is involved. Finally, both the private and the public sectors can be certain of the tax status regarding the purchase of computer software.

Christian E. Markey III

The

COMPUTER/LAW
JOURNAL

VOLUME 4
(1983-1984)