

SALES/USE TAXATION OF SOFTWARE: AN ISSUE OF TANGIBILITY

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INTRODUCTION

Over the past fifteen years, the software industry has exploded into a high growth and extremely lucrative business. A 1980 study indicated that the software products industry grossed about \$590 million in revenues that year and predicted sales would reach \$2 billion by 1986.¹ The 1986 software sales figures greatly exceeded the 1980 predictions and hit the \$12 billion mark.² Because of this financial growth, federal and state governments have attempted to tap the software industry's growing revenues by levying various taxes, including sales and use taxes.

Traditionally, sales/use tax has applied only to the sale of tangible personal property.³ Thus, the sale of services is a transaction exempt from sales/use taxation.⁴ Similarly, sales of non-tangible goods are also exempt from taxation.⁵ In the software realm, programs written for a client's specific needs are not taxed since what is sold is treated as a service.⁶ Programs which are otherwise goods but are sold intangibly (*e.g.*, over a modem) also are not taxed because they do not conform to the tangibility requirement.⁷ This Comment focuses on the taxation of software once it is determined to be a good and not a service. However, this Comment by necessity touches on the distinction between services and goods.⁸

Sales/use taxation of software is fraught with inconsistency, uncertainty, and controversy. The uncertainty and unpredictability of the sales/use tax runs directly counter to the basic taxation principles of efficiency, equity, certainty, and economic effect.⁹ The confusion has become a stumbling block to an

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

2. Telephone interview with Paul Cubbage, Associate Director, Dataquest, Inc. (Sept. 17, 1987).

3. Ball, *What is a Sale for Sales Tax Purposes?*, 9 VAND. L. REV. 227, 228-29 (1956).

4. *Id.*

5. *See id.* at 228.

6. Raabe, *Property, Sales, and Use Taxation of Custom and "Canned" Computer Software: Emerging Judicial Guidelines*, 36 TAX EXECUTIVE 227, 228-229 (1984).

7. *Id.*

8. *See infra* notes 65-75 and accompanying text.

9. *See* G. BREAK & J. PECHMAN, FEDERAL TAX REFORM THE IMPOSSIBLE DREAM? 4-10 (1975); L. MOAK AND F. COWAN, MANUAL OF SUGGESTED PRACTICE FOR ADMINISTRATION OF LOCAL SALES AND USE TAXES, ch. 2 (1961); J. DUE, STATE AND LOCAL SALES TAXATION STRUCTURE AND ADMINISTRATION 24 (1971).

efficient market for software. The disarray creates barriers and disincentives which may eventually hinder the continued growth and development of this industry.¹⁰

Essentially, the inconsistency and uncertainty stems from two sources. First, classifying software as tangible property is a misnomer. Sales/use tax applies only to the sale and transfer of tangible personal property;¹¹ yet, software contains elements of both tangibility and intangibility.¹² Therefore, there is much controversy on the issues of whether software transactions are sales of property or services, and if property, whether the property is tangible or intangible.¹³

The touchstone requirement for sales/use taxation of tangible property yields inconsistent treatment of similar software programs. This inconsistent treatment leads to much confusion. "Canned programs" (prewritten programs requiring no modification for consumer use) are taxed while "custom programs" (programs developed for specific customer needs) are not.¹⁴ However, canned programs are not subject to sales tax if the program is electronically delivered to the buyer.¹⁵

The judiciary is caught in the middle of the fray, burdened with the responsibility of interpreting the different types of software and bringing order to their inherently conflicting treatment. Lacking guidance from precedent or legislature, the courts have further complicated the area by drawing inappropriate analogies and misapplying various tests.¹⁶

The second source of inconsistency is that state and federal taxing entities have not relied on coherent policies or rationales in their approach to software taxation. Rather, each taxing entity has construed and classified software in the manner most advantageous to its own coffer. The result is a hodge-podge of

10. See generally THE PRESIDENT'S TAX PROPOSALS FOR FAIRNESS, GROWTH, AND SIMPLICITY 1-2 (May 1985) (general discussion of how problems of inequity and confusion in the tax system will impede growth).

11. CAL. REV. & TAX. CODE § 6051 (sales), § 6201 (use) (West 1987); MASS. GEN. LAWS ANN. ch. 64H, § 1(12) (sales), ch. 64I, § 1(1) (use) (West 1987). "Tangible" has been defined to include property that may be felt or touched, realized or possessed, readily apprehensible to the mind, seen, or estimated by the physical senses. Note, *The Nature and Taxability of Computer Software*, 22 WASHBURN L.J. 103, 107 (1985) (collecting common law definitions of tangible property).

12. *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405, 408 (Tenn. 1976) (sale of computer software did not constitute the sale of tangible personal property; the intangible elements lie in the knowledge and information stored in the program itself and the tangible element lies in the storage medium).

13. See Raabe, *supra* note 6, at 228-29; see also Note, *State and Federal Taxation of Computer Software: A Functional Approach*, 4 COMPUTER/L.J. 737 (1984); Note, *Software Taxation: A Critical Reevaluation of the Notion of Intangibility*, 1980 B.Y.U.L. REV. 859; White and Raabe, *Software Taxation: Current Cases Produce Mixed Results for Taxpayers*, 62 TAXES 489 (1984); Hollman, *Sales Taxation of Software: The Problem Lives On*, COMPUTER LAW., Mar. 1984, at 31; Tunick and Schechter, *State Taxation of Computer Programs: Tangible or Intangible?*, 63 TAXES 54 (1985).

14. Hoffman, *Software and State Sales/Use Taxes—A Current Look at 47 States and the District of Columbia*, 3 COMPUTER L. REP. 703, 705-19 (1985).

15. Lefevere, *A Case Study in Software Taxation*, 3 COMPUTER L. REP. 563 (1985).

16. The judiciary has radically shifted positions from 1976, when a court found software to be intangible, *Commerce Union Bank v. Tidwell*, 538 S.W.2d 405 (Tenn. 1976); to 1983, when a court ruled that software was tangible due to its container, *Comptroller of the Treasury v. Equitable Trust*, 296 Md. 459, 464 A.2d 248 (1983).

incongruous standards for tax treatment which vary not only within a state but also from state to state and from the state and federal levels.

This Comment first examines the development of three key aspects of software sales/use taxation: the federal (IRS) treatment of software, the state taxing agencies' treatment of software, and the evolution of the courts' positions and views. This Comment then criticizes the tangible/intangible distinction which has become the basis for software taxation. It concludes that this distinction is the primary source of confusion regarding software taxation. Even if the state and federal legislatures were to adopt consistent policies, the system would still be greatly flawed as long as tangibility remains the focus. Finally, this Comment presents several alternative systems for sales/use taxation of software, including a functional standard for evaluating whether programs are taxable.

I. BACKGROUND

A. The Federal View

Sales/use tax treatment traditionally depends upon classification of the properties as either tangible or intangible.¹⁷ The federal government first addressed the tangibility of software in 1969 when IBM announced it would "unbundle" its software and hardware.¹⁸ Prior to 1969, computer companies sold software and hardware together in a "bundled" package.¹⁹ Software taxation presented no problems since hardware was acknowledged to be tangible and subject to sales/use tax and software was considered incidental to the hardware, and so was also taxed.²⁰

However, when IBM unbundled its products, the IRS took the opportunity to characterize software as intangible.²¹ The IRS denied software owners the tax benefits that applied only to tangible property. In particular, software owners could not use the investment tax credit (ITC) or accelerated depreciation for software acquisitions.²² This differential treatment of depreciable hardware and nondepreciable software is even more significant under the Economic Recovery Tax Act of 1981 (ERTA)²³ and Accelerated Cost Recovery System (ACRS),²⁴

17. J. HELLERSTEIN & W. HELLERSTEIN, *STATE AND LOCAL TAXATION: CASES AND MATERIALS* 565-66 (4th ed. 1978); see also Ball, *supra* note 3; *supra* note 12 and accompanying text.

18. Roskam, *The State Sales Tax Treatment of Computer Software: A State-By-State Review*, 36 *TAX EXECUTIVE* 234, 240 (1984).

19. "Bundling" is defined as the tying together of different products for the purposes of a single transaction. See J. SOMA, *COMPUTER TECHNOLOGY AND THE LAW* §§ 4.02-4.04 (1983); Johnston, *Product Bundling Faces Increased Specter of Illegality Under the Antitrust Laws*, *COMPUTER LAW.*, Sept. 1984, at 1.

20. Note, *State and Federal Taxation of Computer Software*, *supra* note 13, at 737, 750-51.

21. Rev. Proc. 69-21, 1969-2 C.B. 303. For further discussion on the subsequent history of this ruling, see Roskam, *supra* note 18, at 240.

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

23. I.R.C. §§ 46-49 (CCH 1987) (ITC); I.R.C. §§ 168, 1245, (CCH 1987) (depreciation) (both the provisions for ITC and depreciation refer to tangible property).

24. ACRS applies to all capital equipment, including tangible property, giving an even faster rate of depreciation than other accelerated methods. Thus, recovery of costs for hardware

because the benefits linked to ownership of tangible property have been greatly expanded.²⁵

B. State Views

At the state level, sales/use tax is the traditional vehicle for raising revenues. Because sales/use tax only applies to tangible property, state taxing entities with an eye towards maximizing revenues must broadly construe what is "tangible property." Not surprisingly, most state taxing agencies have failed to follow the federal government's approach. State tax boards tend to treat all unbundled software, except custom software, as tangible and therefore taxable.

Two states paved the way for this trend. In 1976 New York proposed to tax, retroactive to 1965, all transactions relating to software, including underlying services related to development.²⁶ The rationale for that proposal was simply that software involved the transfer of tangible property, therefore, software and development services should be subject to tax.²⁷ After much public outcry,²⁸ New York later exempted services and custom programs from sales/use taxation, but continued to tax canned programs.

Similarly, California gained notoriety when its Board of Equalization promulgated a regulation²⁹ to tax all software, whether custom or canned.³⁰ This regulation later was modified by judicial and legislative action to specifically exempt all custom software from sales/use taxation.³¹

Other states quickly followed California and New York's lead and adopted policies taxing software.³² These taxation plans were frequently implemented without adherence to any uniform objective or criteria other than concern for the state's coffers.³³ The states justified their actions by two theories: (1) software is inherently tangible property, thus *ipso facto* subject to sale/use tax; or (2) software is intangible property, but subject to sale/use taxation when transferred in tangible form on a storage medium, such as tape or disk.³⁴

The result has been inconsistent treatment of software between states. For example, Virginia, Maine, Michigan, and Maryland tax canned software but recognize custom software as a service which will not be taxed,³⁵ while Kansas

under ACRS occurs sooner after the initial purchase while the costs for unbundled software is never recovered through tax depreciation. I.R.C. §§ 168, 1245 (CCH 1987).

25. Roskam, *supra* note 18, at 240; Berwind, *Selected Tax Considerations Affecting Computers*, 282 PRACTISING L. INST. 385, 387 (1982).

26. Hollman, *supra* note 13, at 31.

27. *Id.*

28. *Id.*

29. CAL. ADMIN. CODE tit. 18, § 1502 (1985).

30. White & Raabe, *supra* note 13, at 489.

31. The custom software taxation was specifically overruled by the decision in *General Business Systems v. State Bd. of Equalization*, No. 761-032 (S.F. Sup. Ct. 1982), *aff'd*, 162 Cal.App.3d 50, 208 Cal. Rptr. 374 (1984), and by CAL. REV. & TAX. CODE § 6010.9 (West 1987) (declaring sales and service of custom computer programs are service transactions).

32. Roskam, *supra* note 18, at 240-41, 244-47 (incorporating a state-by-state compilation of sales tax treatment).

33. Hollman, *supra* note 13, at 31.

34. *Id.*

35. VA. CODE ANN. § 58.1-603 (19), (24-25) (1987) (defining custom and prewritten programs and labeling custom programs an intangible personal property); *Measurex Systems v. State Tax As-*

and South Carolina tax sales/use of all software as tangible personal property.³⁶ Still other states treat all software as intangible property or as products that are incidental to services and, therefore impose no sales/use tax on it.³⁷

C. Early Judicial Decisions and Legal Theories

The judiciary traditionally has served as a buffer for the divergent sales tax treatment at the federal and state levels. Most pre-1983 court decisions³⁸ which dealt with the tangibility issue contradicted the state tax boards by holding computer software to be intangible property.³⁹ As a result, the courts mitigated the effects of disparate state and federal policies on software consumers and the software industry.

Courts generally relied upon two principles in classifying software as intangible: (1) software is knowledge, and (2) software encompasses an array of services.⁴⁰

1. Knowledge Principle

The knowledge principle states that the sale of software is the sale of knowledge, an acknowledged intangible.⁴¹ Under this theory, the tangible means of transmitting this knowledge is merely incidental to the transaction.⁴² Therefore, the more separable the content is from the container, the more the transaction looks like a sale of intangible knowledge.

a. Essence of the Transaction Test

Courts have cited the following factors in support of the knowledge principle: (1) the tangible product is discardable; (2) the disk is a mere conduit or "container" for the knowledge, and (3) alternative methods of conveying the information exist.⁴³ These factors comprise the "essence of the transaction" test. They gauge the importance of the tangible medium to the transfer of knowledge. If the information cannot retain its value without transmission

essor, 490 A.2d 1192 (Me. 1985); *Detroit Auto. Interinsurance Exch. v. Dep't of Treasury*, 138 Mich. App. 696, 361 N.W.2d 373 (1984); *Comptroller of the Treasury v. Equitable Trust*, 296 Md. 459, 464 A.2d 248 (1983).

36. KAN. STAT. ANN. § 79-3603(s) (1986); *Citizens & S. Sys. v. S.C. Tax Comm'n*, 280 S.C. 138, 311 S.E.2d 717 (1984).

37. See e.g., *First Nat'l Bank of Springfield v. Department of Revenue*, 85 Ill. 2d 84, 421 N.E.2d 175 (1981) (canned and custom software intangible property not subject to use tax).

38. See, e.g., *District of Columbia v. Universal Computer Assoc.*, 465 F.2d 615 (D.C. Cir. 1972); *State of Ala. v. Central Computer Services*, 349 S.2d 1160 (Ala. 1977); *Commerce Union Bank v. Tidwell*, 538 S.W.2d at 405; and *First Nat'l Bank of Fort Worth v. Bullock*, 584 S.W.2d 548 (Tex. Civ. App. 1979).

39. Schrottenboer, *California Sales Taxation of Computer Software*, 1 SANTA CLARA COMPUTER & HIGH-TECH. L.J. 107, 108 (1985).

40. Note, *supra* note 11, at 108; Note, *Sales and Use Tax of Computer Software—Is Software Tangible Personal Property?*, 27 WAYNE L. REV. 1503, 1513 (1981). See generally cases cited *supra* note 38.

41. Note, *supra* note 11, at 108.

42. *Id.* at 109 (quoting *State v. Central Computer Services, Inc.*, 349 So. 2d 1160, 1162 (Ala. 1977)).

43. Raabe, *supra* note 6, at 232.

through the particular medium, the tangible medium is deemed as crucial to the software and therefore of essence to the transaction.⁴⁴ Alternatively, if the information maintains its value apart from the container, the knowledge is said to be the essence of the transaction.

District of Columbia v. Universal Computer Assocs.,⁴⁵ was one of the first cases to address the issue of software tangibility. The court relied upon the knowledge principle to conclude that the two programs at issue in the case—one custom and the other canned—constituted intangible knowledge not subject to tax.

The court stressed three aspects of the programs. First, the punch cards on which the program was delivered could be destroyed without affecting the computer's performance.⁴⁶ Second, the programs could have been transmitted by other means, such as by electronic transmission, or disk.⁴⁷ These two factors support the proposition that the sale of the programs was not tied to the punch cards. Third, the blank punch cards on which the programs were stored had insignificant value in comparison to the value of the cards with the information encoded.⁴⁸ The information was the valuable commodity since it comprised the bulk of the price; therefore, it was the essence of the transaction. The court concluded that Universal's main object of purchase was the information stored on the cards.⁴⁹ Once the programs were placed in the computer, "what rests in the machine then, is an intangible—'knowledge'."⁵⁰

*Commerce Union Bank v. Tidwell*⁵¹ was the first major sales tax case to address software tangibility. The *Tidwell* court followed *Universal* and applied the knowledge principle and concluded that the software was not taxable.⁵² The court noted that the magnetic tapes were not retained by the buyer, thus supporting the discardability theory.⁵³ The court also found the alternative means of conveyance to be most significant, stressing that the program could have been loaded by means other than the magnetic tapes.⁵⁴ The court held that the tangible magnetic tapes were only conduits for transmitting the intangible intellectual creations.⁵⁵

*First National Bank of Fort Worth v. Bullock*⁵⁶ followed in the wake of *Universal* and *Tidwell* and focused on the separability of information from its container in the "essence of the transaction" test.⁵⁷ The determinative factor for

44. Note, *supra* note 40, at 1514-15.

45. 465 F.2d 615 (D.C. Cir. 1972).

46. *Id.* at 618.

47. *Id.* at 617-18.

48. *Id.* at 618. Another factor that the court mentions is that only title to the custom changes was given to Universal; title to the standard program was retained by IBM. *Id.*

49. *Id.* at 618.

50. *Id.* at 618.

51. 538 S.W.2d 405 (Tenn. 1976).

52. *Id.* at 408.

53. *Id.*

54. *Id.*

55. *Id.*

56. 584 S.W.2d 548 (Tex. Civ. App. 1979).

57. *Id.* at 550.

the court was, ". . . that the desired information could have been transferred in several different ways. . . . Some of the possible methods would not have involved a tangible object at all. For example, appellant's computer could have been programmed over the telephone or by hand."⁵⁸ The court concluded that the primary object of the transaction, the sale of the particular process coded on the software, was intangible; therefore, the sale was not subject to sales tax.⁵⁹

b. Analogies to Other Works

In finding software to be intangible, courts have had to distinguish software sales from sales of other items that transfer intangible attributes, such as phonograph records, books, and movie films. One distinction is the relationship of the item's value to its medium. The *Tidwell* court noted, "[t]he film is inherently related to the movie; without the film there could have been no movie."⁶⁰ In other words, though a story may be transmitted in different forms, the essence of a movie is a story embodied in film. The value of a movie is in the artistic interpretation and translation of a story to the medium of film. The object of the purchase of a movie is the complete package, not just the story itself. Therefore, the value of movies, as well as records and books, lie in the artistic qualities manifested in the medium by which they are transmitted.

By contrast, software's usefulness and value is not diminished if transmitted by non-tangible means such as optically or electronically.⁶¹ Software derives its value from its functional attributes and the use of the stored information, regardless of how it is entered into the computer. Thus, courts conclude that software is independent of the medium and intangible, while movies, records, and books are crucially tied to the medium of expression and therefore are tangible.⁶²

Another distinction is that, unlike the information stored in books, films, or records, program information on a tape or disk is not complete and ready for use when purchased.⁶³ The transmitted or stored information in itself has no useful value to the consumer; it is the result of the program, not the program itself, which the consumer finds useful.⁶⁴ Books, records, and movies are designed to be readily perceptible by human senses with minimal aid of machines.⁶⁵ Therefore, the courts have reasoned that taxing movies, records, and books is consistent with the definition of tangible, while taxing software is not.

58. *Id.*

59. *Id.* at 551. The Texas legislature has since revised its tax laws to tax all computer software as tangible personal property. 1987 TEX. SESS. LAW SERV. Art. 1, Pt. 4, § 11 (Vernon).

60. *Tidwell*, 538 S.W.2d at 407.

61. Note, *supra* note 40, at 1516.

62. *Tidwell*, 538 S.W.2d at 407-08.

63. *State of Ala. v. Central Computer Services*, 349 So. 2d 1160, 1162 (Ala. 1977) (*quoting Tidwell*, 538 S.W.2d at 408); See also Note, *supra* note 40, at 1518.

64. See *First Nat'l Bank of Fort Worth*, 584 S.W.2d at 550.

65. *Central Computer Services*, 349 So. 2d at 1164.

2. Personal Services Principle

Characterizing software as a personal service is another commonly used justification for not applying sales/use tax to software. Because sales/use taxes apply only to the sale of tangible property, personal services traditionally have been exempt from sales taxation.⁶⁶ Thus, if a software sale can be classified as a sale of services, then the transaction will not be subject to sales/use taxation.

The proponents of this view argue that the consumer of custom software actually buys the programmer's service, knowledge, and labor in solving a particular problem.⁶⁷ The software is merely incidental to the rendering of the service. Therefore, the transaction should escape taxation because it is a personal services sale and not a property sale.⁶⁸

The personal services principle is a narrower justification for intangibility than the knowledge principle. An exemption based on the knowledge rationale would exclude all software from taxation on the basis of intangibility as knowledge pervades all types of software programs, both canned and custom. The service principle, on the other hand, applies only where personal services are given. Therefore, software not rendered as a personal service is not exempt.⁶⁹

The personal services principle is employed primarily to justify distinguishing custom software from pre-written software.⁷⁰ The relevant distinguishing factors include: (1) whether the transfer of property was incidental to effect the transaction's primary purpose;⁷¹ (2) whether the value of the service far

66. See *supra* notes 11 & 15 and accompanying text.

67. Note, *supra* note 40, at 1519-22.

68. See, e.g., *State v. Harrison*, 386 So. 2d 460 (Ala. Civ. App. 1980) (transfer of films, photos, and brochures held incidental to public relations service so not taxed); *Hawes v. Dimension Inc.*, 122 Ga. App. 190, 176 S.E.2d 602 (1970) (transfer of architectural models from maker to architect held not taxable); *Babcock v. Nudelman*, 367 Ill. 626, 12 N.E.2d 635 (1937) (transfer of eyeglasses not taxed because incidental to optometric service).

69. The canned versus custom software distinction has been substantially inculcated into state tax regulations. See, e.g., CAL. REV. & TAX CODE § 18 (West 1987); CAL. ADMIN. CODE tit. 18, § 1502(f) (1985); N.J. ADMIN. CODE tit. 18, § 24-25.2(b)(2) (1979); and MASS. REGS. CODE tit. 830, § 64H.06(6) (1981). In addition, the "essence of the transaction" test has been adopted by some state courts. *Bullock v. Statistical Tabulating Corp.*, 549 S.W.2d 166 (Tex. 1977), involved the transfer of processed data cards which the court found to be an element of service. The court analogized the cards to *Williams & Lee Scouting Serv. v. Calvert*, 452 S.W.2d 789 (Tex. Civ. App. 1970), a case in which statistical data mailed to customers in regular reports, because the object of the transaction was the service of collecting field data. *Bullock*, 549 S.W.2d at 168. California decision applied the "object" test to find that a service was rendered. *General Business Systems v. State Bd. of Equalization*, No.761-032 (S.F. Sup. Ct. 1982), *aff'd*, 162 Cal. App. 3d 50, 208 Cal. Rptr. 374 (1984). The *General Business Systems* court stated that the custom programs transferred on punch cards were incidental to the rendering of the service which was the true object of the transaction. *Id.* A Missouri court also applied the "real object" test to find that the final object of the transaction was not the tapes, but rather the data and programs. *James v. Tres Computer Systems*, 642 S.W.2d 347, 349-50 (Mo. Sup. Ct. 1982).

70. Note, *supra* note 40, at 1519.

71. See, e.g., *Accountant Computer Services v. Kosydor*, 35 Ohio St. 120, 133, 298 N.E.2d 519, 527-28 (1973) (transaction held taxable because the hard copy of the accounting compilation was the real object of client's desires); *Avco Broadcasting Corp. v. Lindley*, 53 Ohio St. 2d 64, 69, 372 N.E.2d 350, 353 (1978) (purchase of wire service news reports held nontaxable because the true object of the transaction was the receipt of news information; receipt of written report was inconsequential).

outweighed the value of the property on which the program is transferred;⁷² and (3) whether the product transferred was valuable primarily to the user rather than the general public.⁷³

Under the test provided by these factors, canned software is characterized as property. Applying the first factor, a programmer provides no specific personal services to a canned software purchaser because canned software is sold "off the shelf." Therefore, the property transfer cannot be incidental to a rendering of a specific service.⁷⁴

Even if canned software involves an element of service in the development, canned programs would still fail the second factor. Tangible materials comprise a significant portion of canned software because the program's development cost is spread over the total number of copies produced. Thus, a lower price per program is possible.⁷⁵

Finally, canned software does not fulfill the third factor which requires the product's primary value to be to the user rather than to the general public. Prewritten software is not written for the specificity of a single user, but for the general use of the public.

D. Recent Trends

The vast body of case law still holds that software is intangible because of the knowledge principle. However, two recent cases illustrate a trend toward more caution by some state courts in granting exemptions of software from sales tax. The two cases, *Comptroller of the Treasury v. Equitable Trust*⁷⁶ in Maryland and *Chittenden Trust Co. v. Commissioner*⁷⁷ in Vermont, both involved prewritten programs transferred on magnetic tape. In finding tangibility, both courts held that the form of transfer, the container, controls taxability.

The reasoning in *Equitable* is illustrative of this trend. The parties agreed that the programs at issue were "canned" programs—i.e., programs other than those originally developed exclusively for one buyer.⁷⁸ Thus, the court directly addressed the issue of whether programs are inherently tangible or intangible items.

The *Equitable Trust Company* assumed the traditional position that the trans-action was primarily a transfer of knowledge with an incidental delivery

72. See, e.g., *Perry v. City of Big Rapids*, 34 N.W. 530, 531 (1887) (abstract book analogized to unpublished literary work that has no inherent pecuniary value; value resulted from the continued correction of books, not from intrinsic value); *Community Telecasting Serv. v. Johnson*, 220 A.2d 500, 506-07 (Me. 1966) (market surveys had value primarily as a service; written reports were incidental).

73. See, e.g., *Bucyrus-Erie Co. v. Lorenz*, 26 Ill. 2d 183, 190, 186 N.E.2d 250, 253 (1962) (sale of machinery held incidental to engineering services provided in design of special purpose machine); see also Note, *supra* note 40, at 1520-21.

74. Note, *supra* note 40, at 1520-21; see also Comment, *Software and Sales Taxes: The Illusory Intangible*, 63 B.U.L. REV. 181, 212 (1983).

75. Note, *supra* note 40, at 1521.

76. 296 Md. 459, 464 A.2d 248 (1983).

77. 43 Vt. 271, 465 A.2d 110 (1983).

78. *Equitable*, 296 Md. at 477, 464 A.2d at 257.

of the tangible tape.⁷⁹ Although noting that the value of the tape was insignificant compared to the price of the program, the court refused to sever the program from the medium. Instead, it adopted the comptroller's argument that the tape was an essential part of the program.⁸⁰

The court drew analogies to films, records, and books, holding that while all carried intangible products of intellectual or artistic effort, the tangible containers made the products taxable.⁸¹ Since the sales tax statute had never been viewed as severing the copy of a performance from its tangible carrier, the court reasoned that a similar rule should apply to software.⁸²

The court acknowledged the counter-argument that a key difference between records and software is that music cannot be transmitted to the record player by alternative means while the computer is not limited to magnetic tape, and may use alternate mediums. The court concluded that this distinction was not valid since the loading of the software into the computer does not sever the program from the container. Once the loading occurs, the program exists in two locations: on the tape and in the computer.⁸³ Therefore, the program is still tied to the tape.

The court in *Equitable* also overruled, at least in that jurisdiction, the holding in prior cases that software is intangible. The court dismissed the knowledge principle view of software by asserting that computers contain machine instructions and not knowledge.⁸⁴ "The same is true of the program copies *Equitable* acquired [*i.e.* that they have no use without the tangible medium]. . . . The millions of magnetic impulses which in their precise order have meaning were conveyed to the computer, in the transactions as carried out, by tapes."⁸⁵

The *Equitable* court rejected the argument that the program could be transferred by alternative methods, such as telephone or direct programming. Asserting that alternative methods had no significance over actual facts, the court stated, "because a taxable transaction might have been structured in a nontaxable form, it does not thereby become nontaxable."⁸⁶

The *Equitable* opinion does leave open the question of software transferred via intangible means. Because the court ruled that taxation of software depends upon the form of transfer, it may be inferred that intangible forms of delivery such as electronic transmission still would be exempt from sales taxation.⁸⁷

79. *Id.* at 466, 464 A.2d at 253; *see also* Schrottenboer, *supra* note 39, at 110 (noting taxpayers argument that program was severable from the tape on which it was delivered).

80. *Equitable*, 296 Md. at 470, 485, 464 A.2d at 254, 261. The court also cited legislative intent in support of its decision. The legislature's definition of 'price' included the full retail price without deductions for cost of material, labor, or other expenses. The court reasoned that to sever the program from the tape and apply the sales tax only to the value of the tape would run contrary to the legislature's policy.

81. *Id.* at 473, 478-80, 483-84, 464 A.2d at 255, 258-59, 260-61; *see also* Raabe, *supra* note 6, at 236.

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

83. *Id.* at 473-75, 464 A.2d at 255-56; *see also* White and Raabe, *supra* note 13, at 493.

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

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

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

87. White and Raabe, *supra* note 13, at 493.

The holding in *Chittenden* was almost identical to the holding in *Equitable*. In determining whether canned accounting software purchased on magnetic tape was taxable, the court rejected the essence of the transaction test.⁸⁸ Instead, the court compared the canned software to films, videotapes, books, cassettes, and records and decided that in all of these cases, the container and the content were inseparable.⁸⁹

The *Chittenden* court did acknowledge that electronic transfer of the same program would have escaped sales/use taxation. However, it did not find that fact troublesome. It simply commented that the tax is levied on how a transaction is structured, not how it could have been.⁹⁰ *Chittenden* therefore must accept the consequences of its decision regarding the form of the transfer.

Equitable and *Chittenden*, along with other cases following in their wake,⁹¹ signal a definite change in the views of courts about taxation of canned programs.⁹² One commentator has suggested that the knowledge rationale arguments⁹³ would not be viable in jurisdictions where canned programs are taxed on the theory of tangibility and according to the container test.⁹⁴

In addition, some state legislatures have endorsed this trend, and have furthered their financial interests, by incorporating the *Equitable* decision into statutes.⁹⁵ For example, Minnesota has included in the definition of 'sale' a passage which states that canned software "whether contained on tape, discs, cards, or other devices, shall be considered tangible personal property."⁹⁶

E. California Law

Presently, California distinguishes between custom and canned software, taxing only the latter.⁹⁷ California Revenue and Taxation Code section 6010.9 defines a custom program as "a program prepared to the special order of the customer and includes those services represented by separately stated charges for modification to an existing prewritten program which are prepared to the special order of the customer."⁹⁸

88. *Chittenden*, 143 Vt. at 273-74, 465 A.2d at 1101-02.

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

90. *Id.*

91. See, e.g., *Citizens & S. Systems v. S.C. Tax Comm'r*, 280 S.C. 138, 311 S.E.2d 717 (1984).

92. Schrottenboer, *supra* note 39, at 112-13.

93. See *supra* notes 41-65 and accompanying text.

94. Telephone interview with Ronald Schrottenboer, Attorney, Fenwick, Davis & West in Palo Alto, California (Dec. 18, 1986).

95. See e.g., MINN. STAT. ANN. § 297A.01, § 3(a) (West 1972 & Supp. 1987); TENN. CODE ANN. § 67-6-102 (13)(B) (1983 & Supp. 1987); ARK. STAT. ANN. § 84-1903.5(a) (1980 & Supp. 1985).

96. MINN. STAT. ANN. § 297A.01, § 3(a) (West 1972 & Supp. 1987).

97. CAL. REV. & TAX. CODE § 6010.9 (West 1987); CAL. ADMIN. CODE tit. 18, § 1501 (1985) (Regulation 1502). The relationship between CAL. REV. & TAX. CODE § 6010.9 and CAL. ADMIN. CODE tit. 18, §§ 1501 & 1502 is that "[t]hese regulations are issued . . . to implement, interpret, or make specific provisions of the California Sales and Use Tax Law and to aid in the administration and enforcement of that law, which is contained in the Revenue and Taxation Code." CAL. ADMIN. CODE tit. 18, § 1500 (1985).

98. CAL. REV. & TAX. CODE § 6010.9 (West 1987).

1. Custom Software

Prior to 1982, California Sales Tax Regulation 1502 interpreted Code section 6010.9 to impose sales/use tax on all software, including custom software. In a 1982 case challenging the taxation of custom software stored on punch cards, the court held that the object of the transaction was a service.⁹⁹ Shortly thereafter, the California legislature altered the Code section to exclude custom software¹⁰⁰ and the Governor approved a declaratory law which specifically exempted custom software from sales/use taxation.¹⁰¹

Though the definition of custom software appears to clearly distinguish between custom software and canned programs, classification of modified canned programs is still difficult. In California, modifications to a prewritten program are treated as custom software and not taxed if the modification costs are separately stated from the canned program cost.¹⁰² If modifications are not separately stated, the total amount is taxed.¹⁰³ However, if the modifications are so extensive that the end result is not a modification to a canned program, but rather is a custom program, then the program as a whole is not taxed.¹⁰⁴

2. Canned Software

The California practice regarding sales/use taxation of canned software in tangible mediums is in accord with the personal services principle and the *Equitable* decision. Software that is pre-written and transferred on tangible personal property is taxed.¹⁰⁵ The basis of the tax is the tangible medium "on which or into which information has been recorded or incorporated."¹⁰⁶ The tax applies to the entire amount charged to the customer if the canned software is found to be tangible personal property.¹⁰⁷

99. *General Business Systems v. State Bd. of Equalization*, No. 761-032 (S.F. Sup. Ct. 1982), *aff'd*, 162 Cal. App. 3d 50, 208 Cal. Rptr. 374 (1984).

100. *White and Raabe*, *supra* note 13, at 490.

101. CAL. REV. & TAX. CODE § 6010.9 (West 1984).

102. *Schrotenboer*, *supra* note 39, at 134 (citing CAL. REV. & TAX. CODE § 6010.9 (West 1987)).

103. *Id.*

104. One standard for determining when modifications to a canned program constitute a new custom program is outlined in Regulation section 1502, which provides that if the cost of the modified program is greater than twice the cost of the unmodified program, then the program becomes a custom program. CAL. ADMIN. CODE tit. 18, § 1502(f)(1) (1985). This formula is not helpful in situations where there is no comparison price because no other copies of the prewritten program have been sold, or the modification to the program was done in-house. One author suggests that the point of conversion in such a case is when lines of programming code in the modified program equal or exceed twice the lines of the original program. *See Schrotenboer*, *supra* note 39, at 136.

However, as a general rule, since the intent of Code section 6010.9 is to prevent taxation of services, once the services required for the modification of the program are greater than the services represented by the prewritten parts of the program, the object of the transaction then becomes a service.

105. CAL. ADMIN. CODE tit. 18, § 1502(c)(1) (1985); *see also Hollman*, *supra* note 13, at 114.

106. CAL. ADMIN. CODE tit. 18, § 1502(c)(1), (c)(2) (1985).

107. CAL. ADMIN. CODE tit. 18, § 1502(f)(1) (1985); *see also Simplicity Pattern Co. v. State Bd. of Equalization*, 27 Cal. 3d 900, 615 P.2d 555, 167 Cal. Rptr. 366 (1980) (although the tapes and film had intangible components which could not be taxed, when tangible property is also transferred the full amount of the transaction is subject to tax).

In accord with the logic of the *Equitable* line of cases, California also does not levy sales/use tax upon pre-written programs transferred by electronic media.¹⁰⁸ By nature, electronic transmissions are intangible. Therefore, the tax cannot be predicated upon anything tangible in the transaction. Thus, the transfer cannot be taxed. This result is not derived from statutory or judicial mandate. No codes, regulation sections, or judicial cases directly address this issue. Rather, nontaxability of electronically transferred software is the policy of the State Board of Equalization ("Board").¹⁰⁹

The Board has recently changed its policy on the taxation of tangible materials, such as manuals and documentation, which are incidentally transferred with electronically transferred programs. This is another area which has been left to the discretion of the Board. Prior to 1984, the Board imposed tax on the full payment for the program if tangible materials accompanied the transaction. This was true even if the program was transmitted on an intangible medium.¹¹⁰ Since 1984, however, the Board has taken the position that taxation of manuals and documentation is incidental to the taxation of the program.¹¹¹ Therefore it is no longer necessary to transmit the documentation, as well as the program, electronically to avoid taxation.

In sum, the State Board of Equalization's present policy on canned programs and incidental tangible materials is that if the program is transmitted by electronic signals, the program and tangible documentation will not be taxed. Conversely, if the program is transferred by tangible means, then the whole amount, including the documentation, will be taxed.¹¹² If the vendor separately states the charges for tangible documentation, a sales tax will be levied on those charges regardless of whether the program itself was transmitted intangibly or tangibly.¹¹³

II. CALIFORNIA'S PROPOSED REGULATORY CHANGES

On August 13, 1987, the Board presented a proposal for changes to Title 18 of the California Administrative Code § 1502, which was discussed on October 7, 1987.¹¹⁴ Though the proposal is fairly voluminous, most of the changes are superficial in nature.¹¹⁵ However, the proposal does make several

108. Hollman, *supra* note 13, at 136.

109. Telephone interview with Schrotenboer, *supra* note 94. Telephone interview with Bill McAlpine, President, Software Service Assoc. (Dec. 17, 1986).

110. Schrotenboer, *supra* note 39, at 114 (referring to letter from State Board Tax Counsel).

111. *Id.*

112. *Id.*

113. *Id.*

114. This proposal is the third in a series of proposals submitted by the Board on Regulation 1502. Each of the prior proposals (Oct. 5, 1986 and May 5, 1987) were rejected in public hearings.

115. Most of the proposed amendments would simply update present terminology to reflect current usage. For example, "computer" would replace "data processing equipment;" "data entry" would replace "keypunching;" and "storage media" would be used instead of "punch card, paper tape, magnetic tape, and drums." See Letter from Douglas Bell, Executive Secretary to the State Board of Equalization, to all interested parties (Aug. 8, 1986) (entitled "Proposed Regulatory Action by the State Board of Equalization").

substantive changes to section 1502. In particular, two amendments to the Regulations reflect recent developments in the common law.¹¹⁶

The first amendment would exempt custom software from sales/use tax. The amendment proposes to change the language of section 1502 to provide: "Tax does not apply to the sale . . . of a custom computer program, other than a basic operational program, regardless of the form in which the program is transferred."¹¹⁷ As the wording of the section now stands,¹¹⁸ the Regulations contradict the Revenue & Taxation Code; the relevant language was never deleted from the Regulations after the 1982 passage of the superseding Code section. This new amendment would simply conform the Administrative Code to the Revenue & Taxation Code.

The second proposed change would incorporate the intangible medium exception for canned programs into the Regulations. The text of the proposal states that "the sale or lease of a prewritten program is not a taxable transaction if the program is transferred by remote telecommunications . . . and the purchaser does not obtain possession of any tangible personal property."¹¹⁹ Though this exception has long been the unofficial policy of the Board, this second amendment would codify and sanction the container test for tangibility.¹²⁰ Thus, the California State Board of Equalization seems intent on following the trend set by the *Equitable* court, focusing on tangibility and applying the container test as the standard for software taxation. The proposed regulations would exempt from sales/use taxation prewritten programs which are electronically transmitted while preserving the tax for the same programs transferred by tape or disk.

116. Letter from Douglas Bell, *supra* note 115.

117. *Id.*

118. CAL. ADMIN. CODE tit. 18, § 1502(f)(2) (1985) states: "[t]ax applies to the sale of custom programs transferred to the customer in the form of punched cards, or in tape, disc, drum, or similar form, or in the form of typed or printed sheets . . ."

119. Proposed Amendments to CAL. ADMIN. CODE tit. 18, § 1502(f)(1)(D) (Mar. 10, 1987), CAL. ADMIN. NOTICE REG. No. 12-2, at 181 (Mar. 20, 1987).

120. Telephone interview with Alan Foster, American Electronics Association (Dec. 17, 1986). See also AMERICAN ELECTRONIC ASSOCIATION, COMMENTS ON REGULATION 1502 (Oct. 8, 1986).

AEA's "Comments on Regulation 1502" notes that a very controversial proposed change is 1502(f)(2)(F) which would exclude programmable manufacturing machinery or equipment from the definition of a computer for purposes of custom programs. Thus, programs specially prepared to operate manufacturing or testing machinery and equipment would not qualify as a custom program because the equipment would not qualify as computers.

Another controversial change is 1502(f)(2)(B) which proposes to increase the degree of modification needed to change a prewritten program to a custom program. Presently, the regulations state that the modification needs to constitute more than 50% of the total charge (*i.e.* twice the pre-modified price) for the transfer to be regarded as a service. (Sales/Use Tax Regulation § 1502(f)(1) (1985).) The proposal would increase the amount of modification needed to ten times the pre-modified price (or 90% of the total charges). Proposed Amendments to CAL. ADMIN. CODE § 1502(f)(2)(B), *supra* note 119.

Debate also rages over the issue of taxation of software royalty payments. Presently, the Board taxes each transfer of tangible software. Therefore, in the normal course of developing, marketing, and distributing software, a program may be taxed multiple times before it reaches the end user. See AEA'S COMMENTS ON REGULATION 1502, *supra*.

III. ALTERNATIVES TO THE CURRENT SOFTWARE SALES TAX TREATMENT

A. Basic Principles of Taxation

Several basic principles form the foundation of taxation policy in the United States. The most important of these principles are efficiency, equity, certainty, and positive economic effect.¹²¹ As one noted author argues, "[a] system of taxation which wholly disregards these principles is fatally defective and must be condemned."¹²²

The efficiency principle encompasses notions of both fiscal and economic efficiency. Fiscal efficiency characterizes any system which can be both administered and complied with at a low cost, free from unduly complicated processes and improper burdens.¹²³ That way, revenue is maximized at the lowest combined cost and burden to the government and the taxpayer. One of the most important factors in achieving fiscal efficiency is the establishment of administrable demarcations for taxable items, so that a taxable item can be easily identified and taxation cannot be easily avoided by simply restructuring the transaction.¹²⁴

An economically efficient tax law promotes the legislative goals of the tax without unduly hindering or affecting other goals or aspects of the tax system.¹²⁵ The law should not inadvertently introduce unanticipated biases or foster uncalculated behavior. In other words, the tax system should be neutral, and not influence one's economic behavior simply because of the manner in which the tax is levied.¹²⁶ Thus, the economic factors within the marketplace will be allowed to function at their optimal level, regulated only in the precise manner contemplated by the legislature.¹²⁷

An ideal tax system is also equitable in its application. Not only does it treat taxpayers in similar economic circumstances similarly, but it makes suitable distinctions in its treatment of those in different economic situations.¹²⁸ This

121. J. PECHMAN, *FEDERAL TAX POLICY*, at 5-6 (4th ed. 1983); Chapman, *The American Tax Structure—A Business View*, in *ESSAYS ON TAXATION* 9, 13 (1974); see also L. MOAK & F. COWAN, *supra* note 9, at 12-21; J. DUE, *supra* note 9, at 24.

122. W. GREEN, *THE THEORY AND PRACTICE OF MODERN TAXATION* 30 (1938).

123. G. BREAK & J. PECHMAN, *supra* note 9, at 9. See also L. MOAK & F. COWAN, *supra* note 9, at 12-13.

124. Comment, *supra* note 74, at 181, 215-16; R. MAGILL, *THE IMPACT OF FEDERAL TAXES* 7 (1943).
125.

[The] primary goal of taxation is to transfer control of resources from one group in the society to another and to do so in ways that do not jeopardize, and may even facilitate, the attainment of other economic goals. . . . [Other goals include] such standard economic goals as price stability, high employment, satisfactory growth, appropriate controls over the environmental effects of private activity, and suitable levels of international monetary reserves.

G. BREAK & J. PECHMAN, *supra* note 9, at 4, 7.

126. *Id.* at 7.

127. *Id.* In this Comment, the term "neutrality" refers to absence of an unanticipated effect on behavior, not, as used by some commentators, to lack of effect. See J. DUE, *supra* note 9, at 24 (1971); Due, *The Nature and Structure of Sales Taxation*, 9 *VAND. L. REV.* 123, 131-32 (1956).

128. T. REESE, *THE POLITICS OF TAXATION* xii (1980). Reese defines equity as having two components: horizontal equity, which refers to the like treatment of likes; and vertical equity, which looks at the distribution of a tax burden among people who are of different wealth. Because

equitable principle necessarily raises questions of line-drawing in determining the extent of "similar economic circumstances."¹²⁹

Certainty in the tax laws is a fundamental principle in the establishment of an ideal tax structure because predictability of tax consequences is an essential component of the other basic tax principles. When a tax law is imprecise and uncertain in its application, courts and taxing entities may inconsistently interpret it such that the tax consequence of an activity may not be known in advance or may differ dramatically from one area to another.¹³⁰ Consumers, uncertain of tax consequences of their activities, may adopt economic behavior that is not anticipated by the legislature. Because of this uncertainty, market participants may not perform to their fullest potential. Thus, certainty in a tax law impacts greatly upon its efficient application, on the equal treatment of taxpayers, and on the fostering of economic growth.¹³¹

Finally, taxation has always been a mechanism for the stabilization and regulation of the economy.¹³² Recognizing this fact, legislatures, politicians, and academicians have emphasized the economic effects principle of taxation, with a particular focus on encouraging economic growth.¹³³

B. Problems With The Current Law

Sales taxes were originally imposed upon the privilege of selling tangible personal property at retail within a state.¹³⁴ Thus, the tangible/intangible dichotomy primarily evolved to differentiate between retailers selling taxable property goods and retailers selling services, who are "consumers, not retailers, of tangible personal property which they use incidentally in rendering the service."¹³⁵ However, this tangible/intangible distinction is an anachronistic holdover from an era in which the nature of products was easily identifiable.¹³⁶

Software defies a simple tangible/intangible characterization. It inherently encompasses both tangible and intangible elements. The intangible elements lie within the program itself. They include the intellectual contents of the program (function, internal design, algorithms) as well as property rights (patent, copyright, trade secrets).¹³⁷ The program, however, is usually expressed in some

sales/use tax is a consumption tax on a one-time transaction, the focus of this discussion will center on horizontal equity. Vertical equity encompasses policy questions such as whether a sales tax should be the same regardless of who the purchaser is, even though it would be proportionally higher for a poorer purchaser than a richer purchaser. See G. BREAK & J. PECHMAN, *supra* note 9, at 5; L. MOAK & F. COWAN, *supra* note 9, at 13.

129. L. MOAK & F. COWAN, *supra* note 9, at 13 (referring to the scope of equity consideration between vendors and other citizens, and between vendors and other vendors).

130. G. BREAK & J. PECHMAN, *supra* note 9, at 10.

131. *Id.*; see also 1 TAX REFORM FOR FAIRNESS, SIMPLICITY, AND ECONOMIC GROWTH 1-2 (Dep't Treasury 1984); R. MAGILL, *supra* note 124, at 7.

132. A. KRAGEN & J. McNULTY, CASES AND MATERIALS ON FEDERAL INCOME TAXATION — INDIVIDUALS, CORPORATIONS, PARTNERSHIPS 3, 725-31 (4th ed. 1985).

133. R. BLOUGH, THE FEDERAL TAXING PROCESS 466-71 (1952).

134. Greener, *The Use Tax & Its Relationship to the Sales Tax*, 9 VAND. L. REV. 349, 350 (1956).

135. CAL. ADMIN. CODE tit. 18, § 1501 (1985).

136. Schrottenboer, *supra* note 39, at 107.

137. Tidwell, 538 S.W.2d at 407.

tangible medium such as a diskette or tape. Therefore, the ambiguity regarding the tangibility of software necessarily fosters an equal confusion in a sales tax structure which focuses so heavily upon the tangible/intangible distinction. Taxing authorities can therefore take advantage of the dichotomous nature of software and manipulate the taxation rules so as to maximize revenue.¹³⁸

The recent trend of state courts toward application of the container test for the determining tangibility of software merely emphasizes the inappropriateness of the tangible/intangible focus. The tangible/intangible distinction, especially as applied in recent cases, is theoretically unsound; it violates the basic taxation principles as outlined above. The *Equitable* court, in justifying the use of the container test for software and the results obtained, inappropriately drew analogies to films and books, and misplaced its priorities in seeking equitable treatment between them.¹³⁹

1. Certainty

One of the basic problems with the present treatment of the sales tax is the lack of certainty in the policies governing state and federal sales taxation. Currently, the federal government has taken a contrary position to that of state governments on the issue of software tangibility. The IRS has declared software to be intangible,¹⁴⁰ thus limiting the taxpayer's ability to take the kind of tax benefits available on tangible products, such as computer hardware.¹⁴¹ Meanwhile, most state taxing authorities have classified software as tangible property and therefore taxable in the same manner as the acquisition of computer hardware.¹⁴²

Taxpayers are caught between the conflicting state and federal policies. While courts in the past have mediated this conflict by siding with the IRS, the current trend, epitomized in *Equitable*, swings in the opposite direction.¹⁴³ Courts are finding software to be tangible and therefore taxable. The consequence of this reticence is that software consumers are caught in the middle of a policy gap. A state, with support from the courts, imposes a sales tax on software as tangible property. On the other hand, the IRS, finding all software intangible, precludes the taxpayer from obtaining accelerated depreciation,¹⁴⁴ which is normally given to tangible goods.¹⁴⁵

138. Bigelow, *The Computer and the Tax Collector*, 30 EMORY L.J. 357, 374 (1981).

139. See *supra* notes 76-87 and accompanying text.

140. Rev. Proc. 69-21, 1969-2 C.B. 303; see also Roskam, *supra* note 18, at 240; Berwind, *supra* note 25, at 387-388.

141. See *supra* notes 21-25 and accompanying text.

142. *Id.*

143. See e.g., *Equitable*, 296 Md. at 471, 464 A.2d at 259.

144. I.R.C. §§ 167, 168 (1986).

145. Roskam, *supra* note 18, at 240. In addition, the 1986 Tax Reform Act repealed the itemized deduction for sales tax for individuals. As a result, hobbyists will pay sales tax on software deemed tangible by the state, but will be unable to deduct this sales tax for federal tax purposes. Businesses which purchase software are not affected adversely by the 1986 Tax Reform Act's repeal of the sales tax deduction provision. They may still deduct the sales tax as an ordinary business expense for federal income tax purposes. I.R.C. § 162 (1986).

This gap has undoubtedly confused software users about the tax consequences of purchasing software.¹⁴⁶ For example, a company buying a computer system may be faced with the option of purchasing bundled software or more advanced unbundled software. Such an important and costly decision is complicated by these conflicting laws.

Moreover, this uncertainty inhibits the software industry as a whole. The future tax status of software is left unclear and tentative.¹⁴⁷ The conflicting messages and incentives sent by the different government entities will forestall the expansion and growth of the industry.

2. *Equity*

The present system of sales taxation also suffers from inequitable treatment of similarly situated taxpayers. Consumers purchasing the same program, but receiving it in different manners, will be taxed differently depending upon the nature of the container. The *Equitable*¹⁴⁸ court attempted to adjust the equities of software taxation by analogizing software to other industries and taxing it accordingly. However, the court's attempt at equity fails because the court (a) draws inappropriate analogies between different classes of goods; (b) misplaces its priorities in drawing the analogy; and (c) uses flawed logic in justifying the container test as a means of achieving equity.

a. Inappropriate Analogies

The *Equitable* court focused primarily upon the inequities across industries relying heavily on its analogy of software to books, films, and records. It judged that the act of severing the program from the medium was no different from the process of extracting information, picture, or sound from books, films, and the like. Therefore, software should be taxed in the same manner as these other products.¹⁴⁹

The court, however, ignored the fact that a crucial distinction does exist between software and books or films. This distinction, suggested by the *Tidwell* court, is that the inherent value of the software would not be diminished if the program was transferred to some other tangible media.¹⁵⁰ In contrast, books and films have unique artistic elements that are inextricably intertwined with the particular medium chosen for their expression.¹⁵¹ Many great books or films lose much of their value when transposed from one medium to another. Therefore, the analogy which the *Equitable* court drew across industries was based on superficial similarities which do not warrant similar treatment for software.

146. Hollman, *supra* note 13, at 31.

147. Davidson, *An Overview of Deficiencies in Software Tax Laws*, COMPUTER L. REP. 181 (1985).

148. 296 Md. 459, 464 A.2d 248 (1983). See *supra* note 76 and accompanying text.

149. *Id.*

150. *Tidwell*, 538 S.W.2d at 407; see also Note, *supra* note 40, at 1516, and text accompanying notes 60-62.

151. Note, *supra* note 40, at 1517.

b. Misplaced Priorities

Furthermore, in drawing the analogy to books, records, and films, the *Equitable* court revealed a serious misplacement of priorities. Quizzically, the court strived for congruity of tax treatment between books, records, movies, and prewritten software, rather than first achieving consistent and logical treatment of software generally. As a result, the status of software is further muddled. There is consistency in tax treatment between records, books, and some software; however, treatment within the software industry, of similar software or even the same software, differs according to the form of the transaction.

The logic of achieving equitable treatment within an industry before striving for equitable treatment across industries is obvious. Since the primary purpose of equity in the tax system is to treat all similarly situated persons similarly,¹⁵² participants in an industry naturally expect that items within their industry will be treated more equitably with respect to each other than they are with respect to outside products.

c. Flawed Logic

Another flaw in the logic of these cases is the use of the container test which taxes on the basis of the form of the transaction. The *Chittenden* court, justifying the use of the container test, stated:

To base the tax consequences on how it could have been structured would require rejection of the established tax principle that a transaction is to be given its tax effect in accord with what actually occurred and not in accord with what might have occurred. . . . The bank must accept the consequence of its choice to purchase the program in the form of a tape.¹⁵³

Thus, the message from the *Chittenden* and *Equitable* courts is that uniformity and equity among diverse distribution channels is not important. The same software, if transmitted through different forms, will be taxed differently.

This position, however, is contrary to both the basic equity principle of taxation and the federal views on the taxation of diverse distribution means.¹⁵⁴ Without uniform treatment of different distribution modes, uniform and equitable tax burdens on consumers will be impossible.

The federal tax code evidences a Congressional policy of focusing on the substance of a possibly taxable event, rather than on its form. For example, the corporate reorganization rules provide that certain changes in corporate form—certain mergers, divisions, recapitalizations, and reorganizations¹⁵⁵—that constitute on-going business enterprises should be treated as such. Thus gains and losses realized during these transactions, which otherwise would have been

152. See G. BREAK & J. PECHMAN, *supra* note 9, at 5; L. MOAK & F. COWAN, *supra* note 9, at 13-17.

153. *Chittenden Trust Co. v. Commissioner*, 143 Vt. 271, 275, 465 A.2d 1100, 1102 (1983).

154. *Due*, *supra* note 127, at 131-132 (to minimize inequity, two requirements must be met: "uniformity of burden on [the] consumer . . . except those deliberately excluded, and uniformity of treatment of business firms utilizing diverse distribution channels and methods of production.").

155. I.R.C. § 368(a)(1) (1986).

subject to taxation, are not recognized.¹⁵⁶ These reorganization rules reflect the Congressional mandate that tax collection should not impede the choice of business enterprise form simply because the different business enterprise forms are simply modified forms of the same continuing corporate enterprise.¹⁵⁷ Congress essentially said that a taxable event should be something more fundamental than a mere change in the form of the enterprise.¹⁵⁸

The long-time existence of capital gains/loss treatment also evidences a policy to treat parties equally regardless of the form of the transaction.¹⁵⁹ One primary reason for capital asset treatment is to ameliorate the effects of bundled gain, that is, gain that is accrued over a long period of time but realized all at once. Congress recognized that taxpayers who owned assets which regularly produce realized gains were at an advantage over taxpayers who owned capital assets which only gave lump-sum gains.¹⁶⁰ Accordingly, Congress granted special gains and loss treatment for capital assets.¹⁶¹

Furthermore, under the current approach, the tax laws essentially limit the parties to a single mode of transfer by placing a higher cost on alternative modes. In sum, these effects of confusion, disparity in treatment, and increased costs are contrary to the policy of equity in taxation.

3. Efficiency

The present tax system, which uses the tangible/intangible criterion, is not efficient because it is not neutral. Neutrality is important because freedom to choose between alternative means allows for economically efficient and prudent choices.¹⁶² This neutrality should only be over-ridden by express and well-considered legislative mandate.

156. See I.R.C. §§ 351 *et seq.* (1986) (nonrecognition of gain or loss when property transferred to a corporation).

157. S. LIND, S. SCHWARTZ, D. LATHROPE, J. ROSENBERG, *CASES AND MATERIALS ON FUNDAMENTALS OF CORPORATE TAXATION* 420 (2d ed. 1987) (hereinafter *CORPORATE TAXATION*).

158. *Id.* In *Marr v. United States*, 268 U.S. 536 (1925), the court concluded that even minor changes in the form of a business would cause shareholders to realize a gain or loss. Congress interceded by passing nonrecognition provisions to shift the focus away from the form of the possibly taxable transaction to the substance of the event.

The authors of *CORPORATE TAXATION* criticize the current reorganization rules as having evolved into a nonsensical system. *Id.* at 421. In calling for an overhaul, they state that presently functionally different transactions are lumped together while economically equivalent acquisitions are tested under different criteria which often place a great premium on the form chosen by the parties. *Id.*

159. I.R.C. § 1201 (repealed in 1986 Tax Reform; however, the distinction between capital gains and ordinary income is preserved).

160. D. POSIN, *FEDERAL INCOME TAXATION* 263-64 (1983).

161. This principle against focusing on the form of a transaction as a basis for taxation is also illustrated in areas outside the business realm. For example, the Contribution Reduction Rule limits the deductible amount a person may claim when she contributes appreciated property to a charitable organization. I.R.C. § 170(e)(1)(A), (e)(1)(B) (1986) (applying to taxpayers who make gifts of appreciated property to charitable organizations). The policy behind this rule is to give cash contributors, whose gifts are after-tax dollars, parity with appreciated property contributors, whose gifts include untaxed gain that otherwise would be deducted. Thus, Congress has deemed it inappropriate to tax individuals differently simply because of the mode of charitable contribution the individual chooses. A. KRAGEN & J. McNULTY, *supra* note 132, at 364-80. See generally, D. POSIN, *supra* note 160, at 360-66.

162. See *supra* text accompanying note 127.

The California legislature has not yet expressly announced any policy reasons for favoring electronic transmissions while penalizing floppy disks or tapes,¹⁶³ yet businesses are nevertheless swayed by the present tax structure to adopt the former mode of transmission over the latter. Businesses are not free to make efficient, economic choices among what should be equal and value-free modes of transfer. Instead, the tax system introduces a hidden, unanticipated prejudice favoring one alternative which is not necessarily the most efficient. Thus, the tax structure unnecessarily intrudes into business decisions and forces businesses to adopt inefficient strategies.¹⁶⁴

Courts and legislatures have attempted to streamline and reform the sales/use tax system while still preserving the traditional concepts of tangibility and intangibility.¹⁶⁵ Despite these attempts at reform, disparities between custom versus canned software, and electronic versus physical modes of transfer still exist. Though legislatures may ameliorate the disparities by adopting consistent tax policies at the state and federal levels, they cannot completely eliminate the disparity from the tax system as long as the focus continues to be on the tangible/intangible distinction. To eliminate these disparities, the tax law must shift its analysis away from tangibility and focus instead on other, more workable distinctions.

4. Economic Growth

California's commitment to economic growth in the computer and software industries is evident in its structuring of property taxes.¹⁶⁶ Property and sales/use taxation are usually discussed concurrently since they share many common sub-issues. California levies property taxes on software according to function: applications or operational.¹⁶⁷ Instead of taxing all software, the California legislature decided to exempt application software for fear that, if taxed, the growth of the computer industry would be suppressed.¹⁶⁸

The muddled and confused state of the present sales tax structure appears to undercut the legislative attempts to foster the economic growth through the property tax. As outlined above, uncertainty, inequity, and inefficiency hinder growth of the market. Therefore, so long as the present tax system persists, the

163. Personal interview with Gary Jugon, Sales Tax Counsel to the State Board of Equalization (May 12, 1987).

164. J. DUE, *supra* note 9, at 24. See also *Tax Reform Act of 1986*, S. REP. No. 313, 99th Cong., 2d Sess. 6-7 (Comm. Print 1985).

165. Some courts have attempted to maximize equity, efficiency, and certainty within this framework. See e.g., *District of Columbia v. Universal Computer Assoc.*, 465 F.2d 615, 618-19 (D.C. Cir. 1972). *Tidwell*, 538 S.W.2d at 406, 408; *First Nat'l Bank of Fort Worth*, 584 S.W.2d at 550-51. The *Equitable* and *Chittenden* courts maximized only equity and certainty. *Equitable*, 296 Md. at 473, 478-80, 464 A.2d at 255-56, 58; *Chittenden*, 43 Vt. at 273-75, 465 A.2d at 1101-02.

166. See *infra* text accompanying notes 192-95.

167. CAL. REV. & TAX CODE §§ 995, 995.2 (West 1987).

168. Note, *The Revolt Against the Property Tax on Software: An Unnecessary Conflict Growing Out of Unbundling*, 9 SUFFOLK U.L. REV. 118, 137 (1974) (quoting *Valuation of Computer Storage Media*, 1 C.L.S. APP. 2-3.2c, at 3 (1973) [sic]); see also Note, *State and Federal Taxation of Computer Software*, *supra* note 13, at 767; Rosen, *Computer Software Classed as Intangible Property Is Exempt from State Property Tax*, J. TAX'N, Feb. 1983, at 115.

software industry will continue to labor under the heavy burdens of this antiquated system.

C. Alternatives

1. Tax All Pre-written Software

One straightforward alternative to the present sales/use tax system would be to simply levy a sales tax on all software by legislative fiat. A program would always be taxed, regardless of the form of transfer. Such an act would promote certainty in the tax structure as there would be no doubt that a program would be taxed. This alternative would also equitably tax all similarly situated software consumers. Since all forms of programs would be taxed, presumably no software seller could escape taxation by simply restructuring the form of the transaction. Therefore, the goals of certainty and equity would be achieved.

This alternative would also promote administrative and market efficiency. Since neither the courts nor the taxing authorities would have to engage in the complicated determination of whether software is tangible, the levying and collection of taxes would be greatly simplified. Market efficiency would be further enhanced because, unlike the present system, all viable modes of transfer would be treated equally; one would not be inadvertently favored over another.

However, this alternative does not correct two of the flaws in the present system. First, although this alternative would promote certainty within a state, the inconsistency between federal and state taxation would still remain.¹⁶⁹ Software consumers would continue to fall into the policy gap: being taxed at the state level but unable to take advantage of tax benefits at the federal level.

Second, this alternative of an across-the-board tax is contrary to the fourth goal in structuring taxation: fostering positive economic growth. The indiscriminate taxation of all pre-written software might suppress growth and development of the software industry. The added burden of the sales tax would increase the transaction costs of the software industry, making both business and individual use of software more costly.¹⁷⁰ Though growth of the industry would most certainly continue, the rate of growth would probably decrease due to increased costs. Therefore, the indiscriminate taxation of software might have an adverse economic effect.¹⁷¹

This concern is reflected in the the California Legislature's decision to exclude application software, a major subcategory of canned software, from property tax.¹⁷² The legislature feared that such a tax would greatly hinder the

169. See *supra* notes 140-147 and accompanying text.

170. See L. KIMMEL, TAXES AND ECONOMIC INCENTIVES 127 (1950).

171. The effects of sales/use taxation is a concern because (1) the software industry is still developing, and (2) many of the innovations in software still come from small ventures. Telephone interview with Paul Cubbage, Associate Director, Dataquest, Inc. (Sept. 17, 1987). These ventures literally "make it on a shoestring," so any increases in product costs could reduce demand and put many of these companies out of business. Telephone interview with Jack Ghiselli, President, Software Services Associates (Oct. 9, 1987).

172. See *supra* note 167.

industry because taxation of application programs would deter research and slow expansion of business activity within the state.¹⁷³

Thus, the alternative approach of indiscriminate taxing of all computer software falls short of the goals required for formulating an ideal tax structure.

2. No Tax on Any Software

A second alternative to the present system is to declare all software intangible regardless of the medium of transfer and thus place no sales/use tax on software. This approach would provide certainty and equity in much the same manner as the first alternative. Because software would not be taxed, all transactions would escape taxation regardless of form or circumstances. Since all software would escape taxation, the tax treatment of all software would be certain. Therefore, this alternative achieves the goals of equity and certainty.

This alternative, unlike the first, is congruent with the view that the IRS has taken toward software. Tax treatment of software at both the state and federal level would be consistent. Therefore, a software consumer would not fall into a policy gap that exists under the present structure or under the structure proposed in the first alternative above. Furthermore, this alternative would be more conducive to the growth and development of the software industry because the transaction costs resulting from taxation would be removed. Yet, all states will not be persuaded. States which do not have large alternative revenue sources are likely to resist this method simply because it would deny the state a major source of revenue.¹⁷⁴

3. Functional Approach

A third alternative would be to adopt a system in which software is differentiated according to function.¹⁷⁵ Such an approach would eliminate the disparity problem by shifting the focus away from the inherently dichotomous tangible/intangible characterization of software. One possible distinction would be to differentiate between operational and applications software.¹⁷⁶ The taxing

173. *The Revolt Against the Property Tax on Software*, *supra* note 168, at 137 (1974) (quoting *Valuation of Computer Storage Media*, 1 C.L.S. APP. 2-3.2c, at 3 (1973) [sic]).

174. A 1985 survey estimated total software sales in the U.S. to be \$5.2 billion. *Business Users Dominate the Market*, INFOWORLD, Dec. 1, 1986, at 15, col. 1. If the average state sales tax were 6%, the total tax revenue for 1985 would have been approximately \$312 million, if all software sales were taxed. *Id.*

175. This alternative has been suggested in prior literature. See, e.g., Note, *supra* note 40, at 1524; Note, *State and Federal Taxation of Computer Software*, *supra* note 13, at 766; *Equitable*, 464 A.2d at 260. The *Equitable* court mentions this alternative several times, possibly hinting at its preference for this mode of analysis. Under the analysis of this Comment, such a functional distinction is superior to other alternatives, so it should be considered again.

176. The *Tidwell* court simply defined an operational program as a program which controls the hardware and makes it run; it is fundamental to the functioning of the hardware. *Tidwell*, 538 S.W.2d at 406. This definition includes compilers, sorts, and utility routines. Applications programs, in contrast, perform tasks of special usefulness to the user. *Id.* These include spreadsheets, word processing programs, and financial programs. See also R. NIMMER, *THE LAW OF COMPUTER TECHNOLOGY* xxix-xxxi (1985). It should be noted that other, narrower, functional distinctions may be made should the legislature decide that more precise categories are needed. For the purposes of this Comment, this author feels that the operational/applicational distinction is sufficiently illustrative of the attributes of a functional approach.

structure might be defined such that operational software would be taxed because it is essential to the hardware's operation¹⁷⁷ and applications software would not be taxed because the intangible program is the basis of the bargain.

This alternative contains the prime attributes of efficiency, certainty, equity, and positive economic effect. First, the question of tangibility/intangibility is never raised, so the ambiguity of characterizing software as tangible does not intrude into the analysis. Instead, taxation of different software categories would be deliberated upon by the Legislature, and the decision made on public policy grounds—the enhancement of the state economy as well as state revenues.¹⁷⁸

Second, the functional approach allows for an efficient sales tax system. An operational/applications distinction is easily administrable for the vast majority of software programs.¹⁷⁹ The software industry has traditionally classified programs as either applications or operational.¹⁸⁰ This reflects a basic and simple characterization that is common to most software. Adoption of this distinction as the basis of taxation would allow the federal and state taxing authority to use the ready-made, distinct, and accepted standard of the industry.

Moreover, this functional distinction is more fiscally efficient because, unlike the present system, one cannot avoid taxation by simply restructuring the transaction while selling essentially the same product. The focus of the applications/operational distinction is on the intended end use of the program. Therefore, unless the item in question lies in a nebulous area,¹⁸¹ one would have difficulty changing the morphology of the program without actually changing the essence of the program.¹⁸² Thus, this approach is more efficient because parties cannot easily avoid taxation by simply changing containers.

Similarly, the functional approach is also more conducive to economic efficiency. One of the primary efficiency problems with the present system is that it is not neutral. The system biases the market to favor one form of distribution although the legislature, in structuring the tax system, did not contemplate such a bias. The proposed alternative would focus on the nature of the program rather than its form. The Legislature would purposefully decide which functional categories of software should be taxed. Therefore, a tax base

177. Note, *supra* note 40, at 1524.

178. Note, *The Revolt Against the Property Tax on Software*, *supra* note 168, at 137.

179. See *infra* text accompanying notes 188-191 (discussion of the problems in categorizing firmware).

180. Cooper, *Systems Contracts—Background Materials*, 282 PRACTISING L. INST. 303, 315 (1982); Bosworth, *Hardware and Software: What Are They?*, 1983 COMPUTER L. INST. 1, 7-8; see also Gilburne & David, *Structuring Agreements for Vertical Distribution of Software*, 282 PRACTISING L. INST. 11, 14 (1982); *Third Party Companies Fill Gap in Software Support*, INFOWORLD, Feb. 2, 1987, at 33, col. 2.

181. "Firmware" may be one of these nebulous areas. Although the firmware question may be resolved by focusing strictly upon the end function of the program, because of the ambivalent nature of firmware (one ROM chip can contain both applications and operational software), one might "restructure" the transaction of firmware more easily than one could redefine the function of more traditional programs which comprise the majority of software. See *infra* notes 188-191 and accompanying text.

182. For example, word processing programs which are application programs, such as Microsoft Word or WordPerfect, are not easily or successfully reclassified without massive restructuring of the program.

distinction would not prejudice different forms of distribution since, if a program is to be taxed, it will be taxed in a manner independent of the form in which it is transferred. Unintentional interference with the efficient market decisions of businesses and individuals would thereby be reduced.

Third, such a distinction allows for greater certainty in both policy and expectations for industry participants and consumers at large. Rather than the present conflicting federal and state taxing policies, this position would conform the state view to the posture first adopted by the IRS in response to the IBM software unbundling¹⁸³—that operational software has a special relationship with the hardware which should be acknowledged by the tax laws.¹⁸⁴ Therefore, the state and federal treatments would be more consistent.

This distinction also fosters certainty of expectations of the programmer, vendor, and consumer. Most software can be easily categorized as either operational or applications programs.¹⁸⁵ Though one programmer may do both types of programming, the programmer's expectation of treatment more logically falls along the lines with his intended end purpose or function of the program, rather than on the form of sale and transfer.¹⁸⁶ When a consumer buys a program, he does so with a specific program purpose in mind, reasonably expecting the same programs to be taxed similarly. From the very beginning of a transaction, all the parties—the programmer, the vendor, and the purchaser—may know and accurately assess how the transaction will be taxed, based on the functional nature of the program.

In summary, this method of distinguishing software on the basis of function is a more equitable solution than the present standard. With the focus of the analysis on the functional characteristics of a program, a vendor may no longer escape taxation by selling the same program and simply transmitting it in one form rather than another. All programs of similar function, regardless of form, will be taxed similarly.

The operational/applications distinction therefore is superior to the tangible/intangible distinction. It adheres to the principles of equity, certainty, and efficiency, which the present system lacks. The proposed position would help foster the expansion and growth of the software industry—first, by setting equitable and predictable policies; second, by relieving the burden of taxation on software; and third, by allowing the state legislatures to make, on public policy grounds, the decisions as to which categories of software to tax.¹⁸⁷

183. See *supra* text accompanying notes 18-25.

184. Note, *The Revolt Against the Property Tax on Software*, *supra* note 168, at 137.

185. See *supra* note 180 and accompanying text.

186. See *supra* text accompanying note 152.

187. A state legislature should make the decisions as to which categories of software to tax. If the overriding concern is to promote the growth of the computer industry as a whole, one author suggests that growth in the application software must be fostered since "[i]t is now a common place observation that hardware manufacturers will be unable to sell their machines unless a substantial body of application software exists for such machines." Gilburne & David, *supra* note 180, at 14.

4. Weaknesses

One potential weakness of the operational/applications distinction is the apparent difficulty in categorizing "firmware."¹⁸⁸ Firmware or microprogramming lies somewhere in the middle ground between hardware and software.¹⁸⁹ Though firmware can become as integral to the operation of a computer as are operational programs, it can also be interchanged with other computers just like application software.¹⁹⁰ Firmware, however, need not necessarily become a problem as long as the focus is strictly maintained on the functional role of the program.¹⁹¹

Nevertheless, state legislatures, because of efficiency, revenue pressures, or other public policy considerations, may want to arbitrarily draw lines regarding the classification of firmware. Even so, this operational/applications distinction is a far better alternative than the present confusing standard of tangibility. This is because the legislatures will contemplate and consciously decide where the line should be drawn and which categories of firmware should be taxed. The result will be a system of taxation which is much more predictable, certain, and efficient since the same categories of software will be treated similarly.

In fact, California has implemented the functional distinction for property taxation of software.¹⁹² Only basic operational programs are subject to a property tax and not application software. This scheme, in effect since 1974,¹⁹³ seems to be working quite well and appears to not be attended by the controversy that surrounds the tangibility issue in sales/use taxation. Property and sales/use taxation are usually discussed concurrently since they share many common sub-issues.¹⁹⁴ However, the discussion of California's property tax structure has remained subdued in spite of the raucous fray over the sales/use tax issues.

Further evidence of the success of the California property tax system is that the property tax structure, and more specifically, the operational/applications distinction have been praised in the legal literature.¹⁹⁵

188. "Firmware" is a physical electronic component in which resides a program defining the product's functional characteristics. Firmware operates in only a non-electrically alterable physical element for processor memory, subject to change or modification only by physical modification or replacement. Nycum, *Protection of Proprietary Rights in Mass Distributed Software and Firmware Products*, 1981 COMPUTER L. INST. § V, at 6.

189. Note, *supra* note 40, at 1525.

190. Note, *State and Federal Taxation of Computer Software*, *supra* note 13, at 768.

191. See *supra* note 188. One commentator suggests that any controversy may be averted by classifying all firmware in the same category as hardware. His rationale is that "firmware is more closely related to operations programs and thus should be placed on the hardware/operations side of the controversy." Note, *State and Federal Taxation of Computer Software*, *supra* note 13, at 768. The author of this Comment, however, feels that such an approach is unnecessary and self-defeating. It would essentially revive the tangible/intangible distinction and container test along the lines of hardware or not-hardware. With the increasing replacement of hardware functions by more complex software programs, such a distinction would not be fruitful.

192. See CAL. REV. & TAX. CODE § 6010.9 (West 1984); *State and Federal Taxation of Computer Software*, *supra* note 13, at 768.

193. Rosen, *supra* note 168, at 115.

194. *Id.* at 114.

195. Note, *supra* note 168, at 137-38; see also *id.* at 115; Note, *supra* note 40, at 1524; Note, *State and Federal Taxation of Computer Software*, *supra* note 13, at 767-769.

The California property tax system demonstrates that a distinction between operational and application programs is administrable and can provide a conceptually sound basis for the development of sales/use taxation of software.

Under the analysis of this Comment, this functional structure is superior to the present system, as well as other alternatives in fostering certainty for and equity among taxpayers, promoting efficiency and positive economic effect in the marketplace, and balancing the competing policy concerns of state revenue and industry growth.

CONCLUSION

The present California sales/use tax system focuses on tangibility, an antiquated analytical framework which has been stretched to fit new technology. Although it is desirable to have a universal system for assessing sales tax on all goods and products, a time must come in which the costs—in terms of confusion, inefficiency, and inequity—outweigh the benefits, and exceptions to universal treatment must be made. Simplicity, certainty, efficiency, equity, and growth are the goals of any tax structure, while universality is but a corollary to these goals. These goals are clearly not met when attempting to apply the tangibility/intangibility distinction to software.

A functional system based upon the applications/operational distinction of software promotes most of the goals of an ideal tax system: efficiency, certainty, equity, and economic growth. A functional distinction also creates vertical categories of taxable items rather than the horizontal categories created by the tangible/intangible standard. Using these concepts accepted in the industry, legislatures may easily identify the broad categories of software which it desires to tax. Accordingly, all the industry participants—programmers, distributors, retailers, and consumers—may accurately and reliably assess the tax treatment which a transaction will incur. Parties will no longer be able to evade taxes by restructuring their transactions. The sales/use tax system will be equitably and consistently applied. Thus, the functional system presents the best alternative to the current sales/use taxation of software.

