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Selected Problems in Taxation of Computer Software, 4 Computer L.J. 605 (1984)

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SELECTED PROBLEMS IN TAXATION OF COMPUTER SOFTWARE†

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and ALISON WHALEN**

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I. INTRODUCTION

Data processing is one of the few areas of law that may be changing faster than the field of tax law. Understanding the plethora of new statutes, regulations, and cases as they apply to rapidly changing business practices in the data processing area is a challenging task. The combination of new developments in the tax laws and evolving concepts of manufacturing and marketing in the data processing industry raises difficult new issues, simultaneously creat-

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ing both taxation pitfalls and opportunities for tax savings. The purpose of this Article is to highlight some of those pitfalls, as well as some of the tax savings opportunities.

II. THE IMPACT OF THE SUBCHAPTER S REVISION ACT OF 1982

The choice of the appropriate investment vehicle is an important decision for any new business. A subchapter S corporation[1] has often been attractive to investors in start-up companies because an S corporation offers its investors the legal advantages of limited liability, while enabling them to derive personal tax benefits from the pass-through of business losses that are anticipated in the early stages of the corporation's development. If the business subsequently becomes profitable, the S corporation affords an attractive solution to the "double tax" problem created by the imposition of a tax on corporate earnings both at the corporate level and upon distribution to shareholders.[2] Since the Economic Recovery Tax Act of 1981[3] reduced the maximum individual tax rate to fifty percent, the subchapter S corporation has been particularly attractive.

Prior to the enactment of the Subchapter S Revision Act of 1982,[4] it was unclear whether a corporation that distributed software could qualify as a subchapter S corporation. Under prior law, a corporation could be disqualified as a subchapter S corporation if more than twenty percent of its gross receipts consisted of "passive investment income." Passive investment income included royalties, which were defined to include "amounts received for the privilege of using patents, copyrights, secret processes and formulas, goodwill, trademarks, trade brands, franchises and other like property."[5] Unlike rents, for which the regulations provided an explicit exception to characterization as passive income where "significant services

1. The former designation "subchapter S corporation" has been replaced by the designation "S corporation." The definition of S corporations and the provisions governing the treatment of their shareholders are contained at §§ 1361-1379 of the Internal Revenue Code of 1954, as amended. Status as an S corporation is elective and all of the shareholders must agree. If a corporation so elects, its individual shareholders include their pro rata share of the corporation's gains and losses on their personal income tax returns.

2. Many corporations attempt to avoid this double taxation problem by paying their employees high salaries. The corporation may then deduct the salaries from its gross income, and a tax is only imposed on the employee. If, however, the business proves very profitable, it may be impossible to justify salaries high enough to eliminate income taxable to the corporation.

3. Pub. L. No. 97-34, 95 Stat. 172 (1981).

4. Pub. L. No. 97-354, 96 Stat. 1669 (1982).

5. Treas. Reg. § 1.1372-4(b)(5)(v) (1976).

were . . . rendered" in generating the passive income,[6] a software distributor could not be assured that the royalties it received in the active conduct of its software development and marketing business would not be characterized as passive income, thus possibly rendering the software distributor ineligible for subchapter S status.

Enactment of the Subchapter S Revision Act of 1982 eliminated all of the passive income limitations for many corporations, including corporations engaged in the distribution of software.[7] Generally, newly formed corporations that elect S status will not have earnings and profits[8] and will not be restricted by any passive income limitations.[9] Consequently, S status, unavailable previously, may now be an attractive alternative for software distributors.

III. THE PERSONAL HOLDING COMPANY TRAP

Personal holding companies are defined by section 542 of the Internal Revenue Code (the Code)[10] as any corporation if (1) at least sixty percent of its adjusted ordinary gross income is "personal holding company income," and (2) more than fifty percent of its stock is owned by five or fewer individuals.

If a corporation is determined to be a personal holding company, an additional tax of fifty percent of after-tax earnings is imposed on all of the undistributed personal holding company income.[11]

"Personal holding company income" includes various types of "passive income." Although the personal holding company provisions of the Code are commonly viewed as applying only to passive income, certain types of royalties may constitute "personal holding company income" even though they are derived from the active con-

6. Treas. Reg. § 1.1372-4(b)(5)(vi) (1976).

7. S status will terminate only when a corporation has both excess passive income and "subchapter C earnings and profits" for each of three consecutive taxable years. I.R.C. § 1362(d)(3) (1982). In addition, if an S corporation has subchapter C earnings and profits at the close of a tax year and more than 25% of the corporation's gross receipts consist of passive investment income, a tax of 46% will be imposed on the excess of the passive income over 25% of the gross receipts, minus deductions.

8. Even if a corporation has always qualified for S status, it may acquire subchapter C earnings and profits for purposes of §§ 1362 and 1375 if it acquires a subchapter C corporation in a tax free reorganization. I.R.C. § 381(a), (c)(2) (1982).

9. If an S corporation has any earnings and profits, they may be eliminated for purposes of §§ 1362 and 1375 through distribution to shareholders prior to the end of the S corporation's taxable year.

10. The provisions of the Code governing tax treatment of personal holding companies are contained in I.R.C. §§ 541-547 (1982).

11. *Id.* § 541.

duct of a business.[12] For example, a software distributor that receives most of its income from copyright royalties generated by its licensed software could be a personal holding company subject to the fifty percent penalty tax on all such income retained by the corporation.[13]

Section 543(a)(4) of the Code states that copyright royalties will be included in personal holding company income unless:

(i) they constitute at least fifty percent of ordinary gross income;

(ii) other personal holding company income is not more than ten percent of ordinary gross income; and

(iii) ordinary business expenses equal or exceed twenty-five percent of net royalties.

It may appear that many software distributors engaged in an active business would be able to satisfy these three tests and avoid characterization of their copyright royalties as personal holding company income. In reality, however, the statute effectively prevents many distributors from exploiting this exception. Royalties attributable to a copyright created by a shareholder are not taken into account when determining whether or not copyright royalties constitute at least fifty percent of a corporation's gross income.[14] Thus, in the typical case in which the shareholders of a newly-formed corporation are also the creators of the copyrighted software distributed by the corporation, it is impossible for the corporation's

12. *Id.* § 543(a). There is no blanket exception under § 543 for income that has been generated through the active conduct of a business but has traditionally been viewed as passive. Exceptions for such types of "active" income have been made by Congress on a piecemeal basis. For example, rent is not considered personal holding company income if adjusted rent constitutes half or more of the corporation's adjusted ordinary gross income and certain other conditions are met. *Id.* § 543(a)(2). Income received from produced film rentals will not be included as personal holding company income if such rentals equal 50% or more of the corporation's ordinary gross income. *Id.* § 543(a)(5). A similar provision exists with respect to copyright royalty income. *Id.* § 543(a)(4). This "active business" exception may not be particularly useful to software developers where the corporation's shareholders have created the copyrighted software. *See infra* note 14 and accompanying text.

13. "Copyright royalties" are compensation for the right to use copyrights issued under Title 17 of the United States Code. *Id.* § 543(a)(4). Copyright is a common form of protection for software.

14. *Id.* § 543(a)(4)(A). Royalties from shareholder-created copyrights are included in the denominator but not in the numerator in determining what fractional share of a corporation's income is represented by royalties. For example, assume a corporation has $200 of ordinary gross income. If $100 of such income consists of royalties, of which $75 is from shareholder-created copyrights, for purposes of the 50% test the corporation's royalty income will be 12.5% (25/200) of its ordinary gross income.

copyright royalties to meet the fifty-percent-of-gross-income test. Under such circumstances, copyright royalties would be personal holding company income. This is the result even though such royalties would, but for the application of the statute, make up more than fifty percent of the corporation's income.

It is at least arguable that software created by shareholders in their capacity as employees of the corporation should not be considered software "created by a shareholder" for the purpose of section 543(a)(4)(A). The purpose of the restriction was to prevent taxpayers from avoiding the personal taxation of passive income attributable to assets that could just as easily, but for high personal tax rates, have been held individually. A corporation in the active business of exploiting software copyrights is not merely a vehicle through which its shareholders can avoid personal taxation of passive income. Therefore, it should not be subject to the personal holding company provisions.

Although this argument may have considerable appeal, it is not supported by the statute. The statute contains no exceptions to the rule that royalties from shareholder-created copyrights may not be included in determining whether the corporation's royalties equal or exceed fifty percent of ordinary gross income. In an analogous situation, Congress created an "active business" exception with respect to income generated by produced film rentals.[15] No such exception exists with respect to shareholder-created copyrights. Although the Internal Revenue Service (the Service) does not appear to be imposing the personal holding company tax on software producers or distributors at present, it is not clear that such reasonable forbearance will continue without statutory protection.

Moreover, even assuming that royalties attributable to copyrights created by third parties constitute at least fifty percent of a corporation's gross income, such royalties may still be personal holding company income if other personal holding company income exceeds ten percent of the corporation's ordinary gross income.[16] For this purpose, royalties attributable to copyrights created by a shareholder owning more than ten percent of the corporation's common stock will constitute other personal holding company income. If such royalties exceed ten percent of the corporation's ordinary gross income, all copyright royalties received by the corporation will be subject to the personal holding company tax. Thus, if eighty-nine percent of a corporation's gross income is from royalties attributable to software copyrights created by unrelated parties and eleven per-

15. *See supra* note 12.

16. I.R.C. § 543(a)(4) (1982).

cent of its income is attributable to software created by a ten percent shareholder, all of the royalty income will be subject to the personal holding company tax.

There are several methods with which to avoid characterization as a personal holding company. For example, S corporations are not subject to the personal holding company tax.[17] Therefore, regardless of the nature of the corporation's income, an S election will enable a corporation to avoid the application of the personal holding company provisions.

A second possibility may lie in recharacterizing the corporation's royalty income. A taxpayer might effect this recharacterization through the use of brother-sister corporations. One corporation would develop the software and sell its product outright to the other corporation,[18] who would then distribute the product, presumably by licensing it. The development corporation would thus be able to capture a substantial portion of the profit attributable to the development of the software through the sale to its sister distributor. Since sales proceeds, unlike royalties, are not personal holding company income, the development corporation will not be subject to the personal holding company tax. Since the distributor corporation's royalty income may be reduced by its amortization of the purchase price of the software, its exposure to personal holding company tax is substantially reduced.[19]

If the sale of software from developer to distributor is for a lump sum or other fixed consideration, there should be no question that

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17. *See id.* § 1363(a) (stating that S corporations shall "not be subject to the taxes imposed by this chapter," including both the personal holding company tax and the accumulated earnings tax).

18. A taxpayer using this structure should be alert to the possible application of I.R.C. § 482 (1982). Section 482 permits the Service to allocate income between controlled corporations "if [the Secretary] determines that such . . . allocation is necessary in order to prevent evasion of taxes or clearly to reflect the income of any such . . . businesses." The stated purpose of § 482 is "to place a controlled taxpayer on a tax parity with an uncontrolled taxpayer by determining, according to the standard of an uncontrolled taxpayer, the true taxable income from the property and business of a controlled taxpayer." Treas. Reg. § 1.482-1(b)(1) (1976).

The taxpayer should also be aware that the proceeds from the sale of the software will probably be characterized as ordinary income rather than as capital gain to the developer corporation either because the software is regarded as inventory or under I.R.C. § 1239 (1982). Section 1239 provides that gain from the sale of property between related persons will be treated as ordinary income where such property is, in the hands of the transferee, subject to a depreciation allowance under I.R.C. § 167 (1982).

19. *See infra* text accompanying notes 31-46 for a discussion of Rev. Proc. 69-21, 1969-2 C.B. 303. The distributor corporation could also avoid such exposure by making the S election.

the sale proceeds are not personal holding company income. It may be difficult, however, for taxpayers to determine the appropriate amount of consideration payable prior to the time that the software is actually licensed by the distributor. If the sale price is contingent on the proceeds of distribution, it is less clear that the transaction can be successfully characterized as a sale. Because of the contingent nature of such payments, they may resemble royalties in some respects.[20] The transfer of all substantial rights in a copyright in perpetuity, however, has been held to constitute a sale for tax purposes, even if the purchase price is contingent on productivity.[21] Such sale proceeds should not constitute copyright royalties, notwithstanding the definition of copyright royalties as "compensation, however designated, for the use of, or the right to use, copyrights."[22] In Revenue Ruling 75-202,[23] the Service held that a sale of a copyright to an unrelated party for a lump sum was not a royalty for the purposes of determining personal holding company status. It should not matter that the price is contingent; indeed in Revenue Ruling 75-202 the Service relied on Revenue Ruling 60-226[24] which, for purposes of determining whether such proceeds constituted capital gain or ordinary income, characterized contingent payments as sales proceeds rather than royalties.

The Service may, however, attempt to distinguish a "sale" to a related party. In *Irving Berlin Music Corp. v. United States*,[25] the Service successfully contended that "service fees" received by a corporation distributing music on behalf of a related entity were copyright royalties for purposes of the personal holding company provisions. The court stated:

> We need not comment on what result would be reached had plaintiff been compensated under a different formula. It is enough to say that when compensation is operationally identical to that of the classic royalty scheme, such payments can not be converted to something other than copyright royalties for the purpose of that definition.[26]

Notwithstanding the court's holding in *Irving Berlin Music*, the fact that a sale is between related corporations should be irrelevant to the characterization of the proceeds. The explicit reliance by

20. *Cf.* I.R.C. § 871(a)(1)(D), (E) (1982).

21. *See* Rev. Rul. 60-226, 1960-1 C.B. 26; Liquid Paper Corp. v. United States, 83-1 U.S. Tax. Cas. (CCH) ¶ 9305 (Ct. Cl. 1983).

22. I.R.C. § 543(a)(4) (1982).

23. 1975-1 C.B. 170.

24. 1960-1 C.B. 26.

25. 487 F.2d 540 (Ct. Cl. 1973).

26. *Id.* at 550.

Revenue Ruling 75-202 on Revenue Ruling 60-226, and the considerable authority in the capital gains area supporting sales treatment where substantially all rights have been transferred, suggests that such sales treatment is appropriate for personal holding company purposes as well. Sales proceeds giving rise to capital gain under such authority should not be recharacterized as royalties for purposes of the personal holding company provisions, even when such a transfer is to a related party.

Assuming that contingent payments between controlled developer and distributor would not be recharacterized as copyright royalties, such payments might still constitute personal holding company income. Section 543(a)(6)(A) of the Code includes as personal holding company income:

> [A]mounts received as compensation (however designated and from whomever received) for the use of, or the right to use, tangible property of the corporation in any case where, at any time during the taxable year, 25 percent or more in value of the outstanding stock of the corporation is owned, directly or indirectly, by or for an individual entitled to the use of the property.[27]

Because both the developer and the distributor corporations would be commonly controlled, it is possible that the Service would characterize the payment from the distributor to the developer as "compensation . . . for the use of . . . tangible property" by the individual shareholders, thereby making such payment personal holding company income to the developer corporation. This result, however, is unlikely. First, it is unclear that section 543(a)(6) applies to outright sales. Second, at least one court has held that section 543(a)(6) applies only to rents and not to royalties.[28] Third, while there is a split of authority as to whether or not this section applies to use of the corporation's property by a sister corporation rather than by the shareholder himself, the more recent authority has held that the section does not apply to brother-sister corporations.[29]

27. I.R.C. § 543(a)(6)(A) (1982).

28. Montgomery Coca-Cola Bottling Co. v. United States, 615 F.2d 1318 (Ct. Cl. 1980). The distinction between rents and royalties, however, is not always clear. *See* Letter Ruling 8226059 (admission fees received by amusement park operator were royalties, not rents; patrons had only a license); Rev. Rul. 54-284, 1954-2 C.B. 275 (compensation received from distribution and exhibition of motion pictures constitutes rent).

29. Section inapplicable: Allied Indus. Cartage Co. v. Commissioner, 72 T.C. 515 (1979), *aff'd*, 647 F.2d 713 (6th Cir. 1981); Minnesota Mortuaries, Inc. v. Commissioner, 4 T.C. 280 (1944), *nonacq*. 1965-2 C.B. 7; Silverman Jans Realty Trust v. Commissioner, 48 T.C.M. (P-H) ¶ 79,404 (1979), *aff'd*, 620 F.2d 314 (1st Cir. 1980). Section applicable: 320 E. 47th St. Corp. v. Commissioner, 243 F.2d 894 (2d Cir. 1957); Rev. Rul. 65-259, 1965-2 C.B. 171.

Fourth, the provision by its terms is applicable only to tangible property. There is, of course, considerable uncertainty as to whether software is tangible or intangible.[30] The Service is unlikely to take the position that software is tangible for purposes of section 543(a)(6) because of the implications that such a position holds for the eligibility requirements for the investment tax credit. If, however, it is ultimately determined that software is tangible property for investment tax credit purposes, the Service is likely to treat it as tangible for purposes of section 543(a)(6) as well. Even then it is unlikely that a textual analysis of section 543(a)(6) will support the argument that contingent sales proceeds paid by a sister corporation constitute personal holding company income.

IV. COST RECOVERY OF SOFTWARE AND THE INVESTMENT TAX CREDIT

A. COST RECOVERY

1. *Revenue Procedure 69-21 and the Proposed Section 174 Regulations*

On January 21, 1983, the Service announced proposed amendments to regulations under section 174 of the Code[31] (Proposed Regulations) which were contrary to its position stated in Revenue Procedure 69-21 and would have substantially limited the ability to deduct currently the costs of developing computer software. On April 19, 1983, however, the Service announced that the Proposed Regulations would not supersede the method of accounting for software development costs established in Revenue Procedure 69-21.[32] This subsequent announcement was after the Proposed Regulations had drawn extreme criticism both from tax practitioners and members of the computer industry who believed that the Proposed Regulations were unjustifiably restrictive.

Prior to issuance of the Proposed Regulations, the seminal guide to taxpayers on the treatment of costs incurred in the development or acquisition of software was contained in Revenue Procedure 69-21.[33] Revenue Procedure 69-21 was published at a time when the computer software and hardware fields were just beginning to evolve from a cottage industry into a multi-million dollar business. The content of the Revenue Procedure is somewhat

30. *See infra* text accompanying notes 66-68.

31. Treas. Reg. § 1.174 (proposed Jan. 21, 1983).

32. *See* IR News Release 83-71 (April 19, 1983); *see also* G.C.M. 38996 (June 8, 1983).

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

vague, perhaps because in 1969 "software" was a product poorly understood by anyone not deeply involved in the field.

Revenue Procedure 69-21 defined software as "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."[34] The Revenue Procedure further stated that the costs of software development "so closely resemble[d] the kind of research and experimental expenditures that fall within the view of section 174 of the Internal Revenue Code of 1954 as to warrant accounting treatment similar to that accorded such costs under that section."[35] Section 174 provides that costs incurred in the conduct of research and experimentation in connection with a trade or business may be deducted immediately or may, at the taxpayer's option, be amortized over the shorter of five years or the demonstrable useful life of the software.[36] Thus, under Revenue Procedure 69-21 costs of software development could either be deducted as an expense in the current tax year or amortized over a five year period. Under the Revenue Procedure, however, the tax treatment of purchased software differed sharply from that of developed software. Where such costs were "bundled" with, or not separately stated from the costs of computer hardware, the software costs could be treated as "part of the cost of the hardware, and could be capitalized and depreciated over the useful life of the hardware." If, however, the cost of the software was "unbundled," or separately stated, it would be treated as an intangible asset, the cost of which could be amortized over five years or such shorter useful life as the taxpayer could establish.[37]

Section 174 does not define "research or experimental expenditures." The regulations, however, provide that research and experimental costs include those costs "incident to the development of an experimental or pilot model, a plant process, a product, a formula, an invention or similar property, and the improvement of already existing property of the type mentioned."[38] Neither the statute nor the regulations are clear as to whether costs incurred in the development of software could, in the absence of Revenue Procedure 69-21, either be expensed or capitalized under section 174. Revenue Procedure 69-21 itself merely states that the cost of software devel-

34. *Id.*
35. *Id.*
36. I.R.C. § 174 (1982).
37. Rev. Proc. 69-21, 1969-2 C.B. 303.
38. Treas. Reg. § 1.174-2(a) (1960). *See also id.* §§ 1.174-3, 1.174-4 (1960) (describing the methods to be used by a taxpayer electing to expense or capitalize research and experimental expenses).

opment "closely resemble[s]" research and experimental expenses. If Revenue Procedure 69-21 were repealed, it is unclear how costs incurred in developing software would be recovered for federal income tax purposes.

Since the publication of Revenue Procedure 69-21, the Service has, at least internally, reversed its position that most computer software development costs are analogous to research and experimental expenses.[39] Instead, the Service has argued that such costs should be capitalized over the useful life of the software, except for the unusual situation in which "prototype" software has been developed.[40] This position represents the premise on which the Proposed Regulations were based.

The Proposed Regulations attempted to restrict the application of section 174 to software development costs, stating that "[g]enerally, the costs of developing computer software are not research or experimental expenditures within the meaning of Section 174."[41] There are certain narrow situations, however, in which development costs might properly be treated as expenses under section 174. For example, programming costs incurred in the development of "new or significantly improved" software might be treated as a research and experimental expense if there were serious doubt as to the "operational feasibility" of the project.[42] Thus, the Proposed Regulations attempted to except from the scope of section 174 those costs that the Service believes are incurred in the mere improvement of an existing product, rather than the development of something "new."[43]

Although the Proposed Regulations have in effect been withdrawn, the Service has implied that that withdrawal is merely the result of "administrative policy" and the "peculiar nature of the

39. *See* G.C.M.s 34681 (Nov. 12, 1971), 36053 (Oct. 9, 1974), 38618 (Jan. 23, 1981).

40. *See* G.C.M. 38996 (June 8, 1983).

41. Treas. Reg. § 1.174 (proposed Jan. 21, 1983).

42. *Id.*

43. I.R.C. § 174 (1982) was initially passed in response to the congressional fear that America was lagging in its exploitation of science and technology because research and development in those areas was too expensive. It was believed that by permitting taxpayers to deduct currently costs that may otherwise have been capitalized, Congress was creating an incentive for greater investment in research and the sciences. H.R. Rep. No. 1337, 83d Cong., 2d Sess. 28, *reprinted in* 1954 U.S. CODE CONG. & AD. NEWS 4017, 4053; S. Rep. No. 1622, 83d Cong., 2d Sess. 33, *reprinted in* 1954 U.S. CODE CONG. & AD. NEWS 4621, 4663-64. However, the legislative intent has been interpreted as encouraging only research and development costs in the experimental or laboratory sense. Treas. Reg. § 1.174-2(a)(1) (1960). *See also* Mayrath v. Commissioner, 41 T.C. 582 (1964). Consequently, § 174 cannot be used for costs incurred in the routine maintenance or adaptation of an existing product.

software industry" and that it has not changed the Service's conceptual position with respect to software development costs.[44] Consequently, it is possible that the Service will make a new attempt to cut back the scope of section 174 and repeal Revenue Procedure 69-21. If such an attempt is successful, many of the costs of software development and acquisition would have to be capitalized. If the software has a determinable useful life[45] it would then be depreciable as a capital asset.[46]

2. *Alternative Methods of Cost Recovery*

The Service has frequently articulated the view that costs incurred in the development and programming of computer software are not analogous to more orthodox research and development costs.[47] If section 174 does not control the recovery of costs for software development, the method of cost recovery would depend on whether software is a tangible or intangible asset. If software is intangible and has a determinable useful life, its cost can be amortized over that life.[48] For example, if the software is subject to a copyright, the regulations promulgated under Code section 167[49] suggest that the useful life of the software is the life of the copyright.[50] Because of the nature of software, however, it is unclear how its costs should be allocated over its useful life. In contrast to tangible assets, the value of software decreases for reasons other than the physical deterioration of its component parts. The information component contained in the software, or the method of recording such information in a medium, may simply become obsolete. The useful life of software is thus more closely related to the amount of income it produces rather than the passage of time, and it may be inappropriate to allocate its cost ratably over its physical life because its value may decline gradually in the first years and far more sharply in the later years.

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44. G.C.M. 38996 (June 8, 1983).

45. G.C.M. 34681 (Nov. 10, 1971).

46. *See* Treas. Reg. § 1.167(a)-3 (1960). It is not altogether clear that software has a determinable useful life. If no useful life can be reasonably estimated, the costs incurred in the purchase or development of software simply cannot be recovered until abandonment, much like the fact that costs incurred in the development of goodwill may not be recovered because goodwill has no ascertainable useful life.

47. *See, e.g.*, G.C.M.s 34681 (Nov. 12, 1971), 36053 (Oct. 9, 1974), 38618 (Jan. 23, 1981).

48. Treas. Reg. § 1.167(a)-3 (1960).

49. I.R.C. § 167 (1982).

50. Treas. Reg. § 1.167(a)-3 (1960); *see also id.* § 1.167(a)-6(a) (1960) (the cost or other basis of a patent or copyright shall be depreciated over its remaining useful life).

When confronted with the depreciation of other assets whose useful life is more accurately determined by the income generated than by the passage of time, the Service has taken the position that the "income forecast" method is an acceptable method of depreciation.[51] Thus, with respect to motion pictures, books, and sound recordings, which also produce an uneven flow of income over their useful lives,[52] the Service has required the use of the income forecast method, asserting that any other method of cost recovery will result in a distortion of income.[53]

Under the income forecast method, the following formula is used to determine the annual depreciation rate:

$$\frac{\text{actual income derived from asset in tax year}}{\text{estimated total income to be derived from asset over its useful life}} \times \text{cost of asset}$$

Thus, if an asset costing $800 actually produced $600 of income in its first tax year and was expected to produce $1200 over its useful life, the asset could be depreciated by $400 in its first tax year.[54]

There is no published authority explicitly permitting use of the income forecast method of depreciation for software. The Service has typically required use of the income forecast method, however, where (i) use of any other method would result in a distortion of income; and (ii) the usefulness of the asset is measured by a criterion other than physical deterioration. Because the physical life of software may not bear any relationship to its economic value, the income forecast method should be available to recover the cost of software.

If the licensor of the software is obligated to pay a royalty to the seller, an alternative cost recovery method is available. It is well settled that the owner of an intangible asset subject to a copyright or patent may annually depreciate the asset in the amount of royalty payments paid or accrued during the tax year.[55]

Finally, if software is determined to be tangible property, its

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51. Rev. Rul. 60-358, 1960-2 C.B. 68.

52. *Id.* at 70. The revenue ruling by its terms addresses depreciation of "films, taped shows for reproduction and other property of a similar nature." Arguably, software could be included in the category of "property of a similar nature."

53. *Id.* at 68. The Service sought to prevent producers of television films from using a "cost recovery" method to depreciate television films. Under the cost recovery method, a taxpayer does not report taxable income until the income generated by the film exceeds its cost. The Service maintained that such treatment was unacceptable because it did not follow the "flow of income."

54. *Id.* at 69.

55. Liquid Paper Corp. v. United States, 83-1 U.S. Tax Cas. (CCH) ¶ 9305 (Ct. Cl. 1983); Newton Insert Co. v. Commissioner, 61 T.C. 570 (1974), *aff'd per curiam*, 545

cost will ordinarily be recoverable under the Accelerated Cost Recovery System (ACRS).[56] Section 168 categorizes personal property as three-year, five-year, or ten-year property, depending upon its prior Asset Depreciation Range (ADR) class life.[57] Although it is unclear into which category software fits, five years appears to be the most likely choice.[58] ACRS then permits the taxpayer to use an accelerated method of depreciation.[59]

If software is tangible property, it is "recovery property."[60] Ordinarily recovery property must be depreciated under ACRS;[61] however, section 168(e)(2) permits the taxpayer to elect out of the ACRS method of depreciation if, "for the first taxable year for which a deduction would . . . be allowable under this section, . . . the property is properly depreciated under . . . any method of depreciation not expressed in a term of years. . . ."[62] The Service has implicitly acknowledged that the income forecast method of depreciation is one that is not expressed in a term of years.[63] Thus, if the useful life of software is more appropriately measured by the

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F.2d 1259 (9th Cir. 1976); Associated Patentees, Inc. v. Commissioner, 4 T.C. 979 (1945); Rev. Rul. 67-136, 1967-1 C.B. 58.

56. Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, § 201(a), 95 Stat. 172, 204-19. ACRS is applicable to property placed in service after December 31, 1980. For a discussion of the tangibility question, see *infra* text accompanying note 72.

57. I.R.C. § 168 (1982). Prior to ACRS, taxpayers could elect depreciation based upon class lives contained in an ADR table. Treas. Reg. § 1.167(a)-11 (1982). The Service has recently repromulgated these class lives for purposes of categorizing property as 3, 5, or 10-year property under ACRS. *See* Rev. Proc. 83-35, 1983-1 C.B. 745. With respect to each ACRS category, taxpayer may elect specified longer lives using straight line depreciation in lieu of the normal ACRS percentages that are based on 175% declining balance.

58. Five years is the residual class for all personal property that is not either 3-year property or 10-year property. Three-year property is personal property that either has an ADR class life of four years or less or is used in research and experimentation. Ten-year property is certain public utility property and real property having an ADR class life of 12.5 years. I.R.C. § 168(c) (1982).

59. The rate of depreciation under ACRS is 175% declining balance, with a half-year convention. Use of the straight-line depreciation method is optional. *Id.* § 168(b).

60. ACRS applies only with respect to "recovery property." "Recovery property" is defined by I.R.C. § 168(c)(1) (1982) as tangible property that is used (i) in a trade or business or (ii) held for the production of income.

61. There shall be allowed as a depreciation deduction a reasonable allowance for the exhaustion, wear and tear (including a reasonable allowance for obsolescence) . . . of property. . . . In the case of recovery property (within the meaning of § 168), the deduction allowable under § 168 shall be deemed to constitute the reasonable allowance provided by this section. . . .

Id. § 167.

62. *Id.* § 168(e)(2).

63. *See* Rev. Rul. 60-358, 1960-2 C.B. 68.

flow of income from the software rather than by the passage of time, a taxpayer might elect to use the income forecast method even if software is determined to be tangible.

B. Investment Tax Credit

The Investment Tax Credit (ITC) was enacted as part of the Revenue Act of 1962 in order to provide incentives to businesses for the purchase of capital equipment.[64] The ITC therefore applies primarily to tangible personal property.[65]

Historically, the Service appears to have taken the position that software that exists independently of hardware is intangible property[66] and therefore ineligible for the ITC. If, however, software is "bundled" with hardware, that is, if its price is not separately stated, the Service permits the ITC with respect to the cost of the entire system.[67]

By focusing on the "bundling" of software and hardware, the Service has avoided the critical question of whether or not software, bundled or unbundled, is a tangible asset. It is possible that the Service has equated bundled software with operational software,[68] which the Service may believe is so integral to the operation of the computer that it assumes the computer's tangible nature. According to Revenue Procedure 69-21, however, "bundled" only refers to the

64. Pub. L. No. 87-834, 76 Stat. 960 (1962).

65. I.R.C. § 46(a) (1982) makes the credit applicable to "qualified investment," defined by § 46(c) as the basis of "section 38 property." I.R.C. § 48(a)(1) (1982) defines "section 38 property" as being primarily tangible personal property. S. Rep. No. 1881, 87th Cong., 2d Sess. 16, *reprinted in* 1962 U.S. Code Cong. & Ad. News 3304, 3318, suggests that the term "tangible personal property" is to be broadly construed, and that the Secretary of the Treasury was authorized to enact "such Regulations as may be necessary to carry out the purposes of the [ITC]."

66. *See* Rev. Proc. 69-21, 1969-2 C.B. 303. In contrast, some state courts have, for purposes of applying state sales tax, found software to be tangible property. *See, e.g.*, Chittenden Trust Co. v. King, 465 A.2d 1100 (Vt. S. Ct. 1983); Comptroller of the Treasury v. Equitable Trust Co., 296 Md. 459, 464 A.2d 248 (Ct. App. 1983); *but see* State v. Central Computer Servs., Inc., 349 So. 2d 1160 (Ala. 1977); Honeywell Information Sys., Inc. v. Maricopa County, 118 Ariz. 171, 575 P.2d 801 (1977); Honeywell Information Sys., Inc. v. Board of Assessment Appeals, 7 Computer L. Serv. Rep. (Callaghan) 486 (Colo. Dist. Ct. 1975).

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

68. "Operational" software is integrated with the computer and carries the set of commands that causes the computer to function. Without operational software, a computer will be unable to perform any useful tasks. In contrast, "applications" software, even if built into the computer, merely causes the computer to perform a specific task, such as operating a payroll system. N.Y. State Bar Assoc., Rep. on the Applicability of Inv. Tax Credit and the Accelerated Cost Recovery Sys. to Computer Software (Apr. 12, 1983) (unpublished paper); Comment, *Software Taxation: A Critical Reevaluation of the Notion of Intangibility*, 1980 B.Y.U.L. Rev. 859, 859 n.2.

unified statement of the price of software, not to the software's physical integration with the computer.[69] It is unclear why the separate statement of the cost of software is at all relevant to its tangibility. Moreover, as a matter of commercial reality most software costs are separately stated. Although it was commercially common at the time that Revenue Procedure 69-21 was issued to bundle software and hardware,[70] the software industry has changed. Most software vendors or licensees purchasing a hardware and software package will now require an itemized cost allocation between software and hardware, if only because, in the event of a system malfunction, the vendee will be more qualified to estimate damages or the replacement cost.[71] The Service's current approach to the tangibility of software therefore deprives software purchasers of the ITC without any sound theoretical basis. Whether a taxpayer can take the ITC appears to be contingent on the purely fortuitous issue of whether or not the costs of his software have been separately stated. This distinction is irrelevant in terms of the purpose of the ITC and the Service will eventually have to come to grips with the question of whether or not software is a tangible asset.

The question of whether software is tangible or intangible is a difficult one. All software consists of both an intangible intellectual component and a tangible physical component. A set of commands, usually only in machine-readable form, is recorded on a physical medium, such as a floppy disk. The computer is then able to "read" the commands contained on the disk in order to perform the required tasks. The physical component of software may be represented by several media including disk, tape, or paper, and the information in the software may be duplicated without any loss of quality or content.[72]

On the one hand, the intrinsic value of software lies in the information conveyed to the computer and not in the physical medium in which that information is recorded. In other words, no synergy flows from the original combination of information and medium.[73]

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

70. *See* Berwind, *Selected Tax Considerations Affecting Computers*, in COMPUTER LAW 1982: ACQUIRING COMPUTER GOODS AND SERVS. 385, 409-10 (1982) (discussion of Rev. Proc. 69-21).

71. *See* N.Y. State Bar Assoc., *supra* note 68, at 10.

72. Unlike sound recordings or films where duplication has historically been accompanied by a deterioration in the quality of the recording or film, software can be duplicated without any impairment in the quality of the program.

73. This has not been true historically with respect to films and sound recordings. Technology in the record industry, however, is currently sophisticated enough to permit sound recording by means of a digital process that is virtually indistinguishable from computer software.

The physical component of software has little value. Because there is no accretion to the value of the information by virtue of its being recorded through any given medium, it may be accurate to characterize software as intangible.

Alternatively, one could argue that software is no different from many concededly tangible assets that are combinations of information and medium. For example, a machine that stamps out a particular part in an assembly line contains information, recorded in the medium of the stamp, that is essential to the performance of the machine's function. The stamp is merely the physical embodiment of that information. So viewed, the distinction between tangibility and intangibility becomes even more blurred and one is left to rely on traditional notions of what has historically been considered tangible.

Judicial and administrative analysis of this problem is not particularly illuminating. Treasury Regulation section 1.48-1(f) provides:

> Intangible property, such as patents, copyrights, and subscription lists, does not qualify as section 38 property. The cost of intangible property, in the case of a patent or copyright, includes all costs of purchasing or producing the item patented or copyrighted. Thus, in the case of a motion picture or television film or tape, the cost of the intangible property includes manuscript and screenplay costs, the cost of wardrobe and set design, the salaries of cameramen, actors, directors, etc., and all other costs properly includible in the basis of such film or tape. In the case of a book, the cost of the intangible property includes all costs of producing the original copyrighted manuscript, including the cost of illustration, research, and clerical and stenographic help.[74]

Relying on this regulation, the Service has asserted that any property that includes intangible property as one of its component parts is intangible and therefore ineligible for the ITC. This view was rejected by the trial court in *Walt Disney Productions v. United States (Disney I)*,[75] in which the Service argued that the costs attributable to script development, costumes, and set design were part of the cost of the copyright to which the film negatives were subject, rather than part of the cost of the negatives themselves, and that the taxpayer should be permitted the ITC only with respect to the cost of the actual film used in constructing the negatives. The court disagreed and held that motion picture film negatives used to make prints for exhibition were tangible property eligible for the ITC be-

74. Treas. Reg. § 1.48-1(f) (1956).

75. 327 F. Supp. 189 (C.D. Cal. 1971), *modified*, 480 F.2d 66 (9th Cir. 1973), *cert. denied*, 415 U.S. 934 (1973).

cause they were "capable of being seen and touched."[76] Having reached this conclusion, the court also dismissed the argument asserted by the Service that the costs of purchasing or producing an item subject to a patent or copyright were, like the copyright, intangible, rather than includable in the cost of the tangible asset.

On appeal in *Walt Disney Productions (Disney II)*, the Ninth Circuit agreed with the district court, reasoning that

> the same regulation, if applied to a production machine in an automobile factory, would deny the investment credit on all but the material costs of a machine developed and patented for use in the manufacturing plant although the amount paid to the inventor for the idea of the machine was insignificant and the bulk of the costs of the machine were the ordinary labor and engineering costs of its production.[77]

Both the district court and the court of appeals focused on the fact that, like a machine used in production, the film negative was a tool used to manufacture inventory. "Without this negative, no positive print would be available to plaintiff to carry out its everyday business."[78] The court of appeals thus agreed with the lower court that film negatives were tangible personal property and that all costs associated with their production were properly reflected in the cost of the film.[79] This analogy may make it possible to distinguish the film negatives, the subject of the controversy in *Disney I* and *Disney II*, from software. Duplication of software does not require a "master" disk. An identical new disk containing the same information may be created by the programmer without use of any "master" disk. A software disk may therefore be less like a tool used for the production of inventory.[80]

Other courts, finding an analogy to film negatives, have followed

76. *Id.* at 192.

77. Walt Disney Prods. v. United States, 480 F.2d 66 (9th Cir. 1973), *cert. denied*, 415 U.S. 934 (1973).

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

79. To some extent, the court of appeals relied on comments referring to the *Disney I* decision contained in the Senate Report issued in connection with amendments to § 48. The Senate Finance Committee was unequivocal in its approval of the *Disney I* holding, stating: "A court case decided the question (of tangibility of motion picture film) in favor of the taxpayer. The committee agrees with the court that motion picture and TV films are tangible personal property eligible for the investment credit." S. REP. NO. 437, 92nd Cong., 1st Sess. 34, *reprinted in* 1971 U.S. CODE CONG. & AD. NEWS, 1918, 1941.

80. Technology in the record industry is currently sophisticated enough to permit sound recording by means of a digital process that is virtually indistinguishable from computer software. To the extent that sound recordings and software may now be precisely duplicated without use of a "master," sound recordings and software may be less analogous to master film negatives for purposes of determining tangibility.

Disney I and *Disney II* in allowing an ITC. In *Texas Instruments, Inc. v. United States*,[81] the court determined that computer generated tape recordings of seismic information were tangible property eligible for the ITC. The Service had contended that the ITC was available only for the cost of the raw tape, and not for the full cost of producing the tapes, on the theory that these costs were incurred in the collection of the intangible information and were therefore not an investment in a tangible asset. The Service argued that if "the capital asset in which the taxpayer's costs are invested is *essentially intangible*, then all costs of acquiring or producing that asset constitute the basis of an intangible asset. . . ."[82] The court, although acknowledging that the distinction between tangibility and intangibility was difficult to discern in the absence of legislative guidance, relied on *Disney I* in rejecting the Service's position. The court reasoned that it could not separate the value of the information recorded on the tapes from the value of the tapes because "[t]he value of the seismic data is entirely dependent upon existence of the tapes and film. If the tapes were destroyed prior to any reproduction . . ., nothing would remain. An investment in the data simply does not exist without recording of the data on tangible property."[83]

The courts appear to have rejected a test of tangibility based on whether an asset is "essentially" intangible and instead have adopted an analysis of whether the asset as a whole is used as a "tool" in the production of inventory. If so, its entire cost, including the cost of its intangible elements, will be eligible for the ITC. This approach has been criticized as necessarily leading to an ad hoc evaluation of the tangibility of software, because "software and the hardware which it operates may at one and the same time be highly integrated from an electronic and physical standpoint while being conceptually distinct tangible and intangible components of an integrated system."[84] It is probable that Congress will soon be forced to recognize both that software is a "bundle of rights" that includes both tangible and intangible components and that a label of tangible

81. 551 F.2d 599 (5th Cir. 1977).

82. *Id.* at 609.

83. *Id.* at 611. *See also* EMI N. Am. Holdings, Inc. v. United States, 675 F.2d 1068 (9th Cir. 1982) (master sound recordings); Bing Crosby Prods. v. United States, 558 F.2d 1293 (9th Cir. 1979). *Contra* Computing & Software, Inc. v. Commissioner, 64 T.C. 223 (1975) (credit information contained in files was intangible for purposes of depreciation deductions; such information was severable from the files themselves). *Cf.* Letter Ruling 8408049 (recent Service position that software embodied in video game master tapes is not tangible for ITC purposes).

84. N.Y. State Bar Assoc., *supra* note 68, at 25.

or intangible must be legislatively imposed on the entire package for purposes of the ITC. Until that time, the case law, although perhaps distinguishable, appears to justify an ITC claim for an investment in software.[85]

V. CONCLUSION

The data processing industry has generated many tax issues that are difficult to resolve within the present framework of statutory and case law. Some problems presented by the application of the tax laws to the software industry, such as the personal holding company trap, may be minimized through careful tax planning. Nonetheless, these problems and the questions surrounding software tangibility may well have to be resolved by legislative action.

85. If software is determined to be tangible property for ITC purposes, it is possible that a taxpayer may be able both to take the ITC and expense the entire cost of the software in the current tax year. Section 174 ordinarily does not apply to property "of a character which is subject to the [depreciation] allowance under § 167." I.R.C. § 174(c) (1982). *See also* Treas. Reg. § 1.174-2(b)(2) (1960). Rev. Proc. 69-21, 1969-2 C.B. 303, however, may suggest that whether software is tangible or intangible, its costs may be deducted in the current tax year because software costs "closely resemble . . . research and development expenditures." Under such a construction, a taxpayer may be entitled to take advantage of both the ITC and § 174.

Conversely, it may be argued that Rev. Proc. 69-21 is no longer apposite once software is characterized as tangible, because I.R.C. § 174 (1982) was never intended to apply to depreciable property. Compare § 179, which permits a taxpayer to elect to expense the cost of certain depreciable assets but, if such an election is made, expressly denies the ITC with respect to those assets. *Id.* § 179(d)(9).