

CUTTING TAXES FOR ELECTRICAL MANUFACTURING AND COIL WINDING EQUIPMENT COMPANIES

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Abstract: Much of the present-day electrical manufacturing and coil winding equipment has application software embedded in it. This embedded application software performs much of the user-level functionality of the equipment and generally has favorable tax treatment at both the state and federal level. Companies that properly recognize the value of this embedded application software can utilize the favorable tax treatment of such software to lower the equipment's effective cost and thereby create value. Vendors that market such equipment can restructure their customer transactions so that their customers can more easily claim these tax benefits. This increases a customer's return on investment for the equipment, which translates to higher vendor revenues.

Key Words: Taxes, Cost Savings, Increased Revenues, Application Software, Embedded Software

I. INTRODUCTION

Embedded software is pervasive in present-day electrical manufacturing and coil winding capital equipment. This software is in everything from coil winding machines to test and diagnostic units. This software is responsible for much of the user-level functionality of the equipment, from back office Enterprise Resource Planning integration to diagnostics and monitoring.

Generally, this embedded software has favorable tax treatment—to the extent that the taxpayer can identify and value it. This favorable tax treatment has both state and federal tax components and creates compelling tax saving opportunities. The problem is that many taxpayers are not aware of these tax saving opportunities, or they cannot get the required information about the software's value from the vendor to use them.

This paper addresses: trends embedded software used in advanced manufacturing equipment in the industry; the tax treatment for software and ways to determine embedded software's value for tax purposes, including an example demonstrating how the tax treatment reduces the effective cost of the equipment; and, in conclusion, a means by which vendors who market large capital equipment to electrical manufacturing and coil winding companies can structure their transactions so that

prospective buyers can benefit from these tax advantages. Vendors that demonstrate the tax advantages of their structure will increase the return on investment (ROI) for their customers, leading to increased vendor revenues.

II. DISCUSSION

A. Electrical Manufacturing and Coil Winding Equipment Trends

Vendors that build equipment to serve the electrical manufacturing and coil winding industry follow the general trends of much of today's large capital manufacturers. Much of the new industry equipment, from winders to testers, relies on a tremendous amount of automation to achieve efficiency. Computers drive this equipment—much of the equipment has software-based control systems. In many cases, manufacturers directly attach or integrate personal computers in their equipment.

Manufacturers embed application software in their equipment using the attached computers. This embedded application software controls many aspects of the equipment, ranging from basic real-time machine command and control, to high-level diagnostics and integration with external company data systems.

B. Tax Treatment of Software

Software generally has favorable treatment at both the state and federal level. However, the mechanics of realizing that favorable treatment varies by tax jurisdiction. Further, the evidence that a taxpayer can use to establish the value of embedded application software varies by jurisdiction as well. The two primary methods to establish the software's value are through direct statement by the vendor, or through an appraisal by an independent software valuation professional.

1. Federal Tax Treatment of Software

The favorable treatment for software at the federal level is attributable to faster expensing of the capitalized software's value. Companies typically depreciate large electrical manufacturing and coil winding equipment over a seven-year period. Compare that with software, which the taxpayer straight-line amortizes over a three-year period.

This shorter write-down period increases the expense that a company can take on the software value earlier in the equipment's life. This defers income taxes that a company would need to pay today until sometime in the future. Since a dollar today is worth more than a dollar in the future, this deferment creates a time value of money opportunity for a company to create value through improved cash flow.

The company must be diligent to properly structure purchase transactions to claim this benefit for federal tax purposes. The IRS is quite particular about software valuations for accelerating the expense write-down. The only evidence the IRS accepts to establish the embedded software's value is the word of the vendor as the vendor lists it on their invoice. Thus, taxpayers can only segregate software costs for tax reporting purposes when the vendor itemizes the cost of each on the original invoice. Appraisals for the software's value by an independent third party after the purchase do not suffice. Further, the listing of the software content on an invoice, via part number or specific description, is not sufficient either. The vendor has to list the actual cost attributable to each software component on the invoice. The position of the IRS underscores the importance of structuring any purchase of large-scale capital equipment to ensure that a company can receive maximum tax benefit. Companies that do not properly structure their purchases lose the opportunities to create value.

2. State Tax Treatment of Software

About 80% of the states levy a tax for tangible personal property owned by businesses. Of those states that levy this tax, about half provide a deduction for software. The reason is simple: software is intangible personal property. Personal property taxes generally only apply to tangible property. There is no conformity among the states for the treatment of embedded application software for property tax purposes. States such as California have liberal regulations for valuing software embedded in capital equipment [1]. Other states, such as Indiana, have recently changed legislation to allow companies to deduct the true tax value of embedded application software from the cost basis of the asset specifically to lower their taxes. There are also states that, like the federal government, only allow a deduction for embedded software when the vendor clearly itemizes the software cost on an invoice. Finally, some states, such as Kentucky, do not exempt software from personal property taxes at all.

C. The Software Segregation Process

There are two primary methods to establish the value of embedded application software. The first method is for

the vendor to itemize the price of the embedded software on their equipment invoice. The second method is to hire an appraiser to determine the embedded software value.

When vendors itemize the price of embedded application software on their invoices, the taxpayer has all the supporting data required to claim federal tax benefits, and state tax benefits as applicable. However, most vendors do not itemize the value on their invoices. Worse, some vendors may even understate the value of the embedded application software, via a lower list price or excessive discounting, if they perceive that the client is unwilling to pay directly for software.

The second method to value the software is to contract with a professional, and most importantly, independent software appraiser. Appraiser independence is important to the tax authority; they want an appraiser without a stake in the value opinion rendered. A taxpayer cannot provide this. A professional software appraiser is well qualified to determine the value of embedded software. The appraiser will consider three primary approaches to valuing software: the cost approach, the market approach, and the income approach. The appraiser will choose the appropriate methods that apply to determine the software's value. Each of the valuation methods mentioned is industry-accepted, which is particularly important in case of any tax disputes.

D. A Tax Savings Example

US companies today pay out more than 50 percent of their earnings through income, property, and transaction-based taxes [2]. However, many companies do not fully realize the tax benefit potential, or their executives think other organizational areas handle the tax issues [3]. In many cases, the person that is familiar with the favorable tax treatment may not be party to the equipment purchase. This can cost the company tax savings opportunities.

Consider an example of how the software tax savings accumulates. For the purposes of this example, assume the following conditions:

- 1) The equipment is located in Indiana, which exempts embedded application software from business personal property taxes
- 2) The equipment costs \$1,000,000
- 3) The software content valuation is 50% of the equipment's cost
- 4) The equipment is depreciated over a 7 year life
- 5) The state personal property tax rate is 3%
- 6) Taxpayer has effective income tax rate of 40%
- 7) A discount rate of 15%

Table I demonstrates how the present value of the combined state and federal tax benefits accumulate to \$48,198, or almost 5% of the equipment's purchase price.

About half of that benefit comes from increased cash flow from faster expensing of the capitalized software. Before segregating the software cost, the present value of the depreciation tax shelter was \$250,979. After restructuring the transaction, the present value of the depreciation and

amortization tax shelter increased to \$276,182. In total, the taxpayer receives a \$25,204 benefit by deferring their income taxes.

The balance of the savings comes from outright reductions in property taxes. In Indiana, embedded application software is exempt from personal property taxes, so the taxpayer reduces their property tax basis by \$500,000 per year. That additional reduction has a present value tax savings of \$22,944.

Table I. Demonstration of Tax Benefits of Segregating Application Software

Tax Analysis, Before Software Segregation

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>
<u>Income Tax</u>								
MACRS 7 Year Depreciation Rate	14%	25%	17%	13%	9%	9%	9%	4%
Depreciation Expense	140,000	250,000	170,000	130,000	90,000	90,000	90,000	40,000
Income Tax Benefit	56,000	100,000	68,000	52,000	36,000	36,000	36,000	16,000
Income Tax Benefit Present Value	250,979							

Property Tax

Indiana True Tax Value Percentage	40%	56%	42%	32%	24%	18%	15%	15%
Property Tax Payments	(12,000)	(16,800)	(12,600)	(9,600)	(7,200)	(5,400)	(4,500)	(4,500)
Present Value of Property Tax Payments	(45,989)							

Tax Analysis, After Software Segregation

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>
<u>Income Tax</u>								
MACRS 7 Year Depreciation Rate	14%	25%	17%	13%	9%	9%	9%	4%
Depreciation Expense	70,000	125,000	85,000	65,000	45,000	45,000	45,000	20,000
Income Tax Benefit	28,000	50,000	34,000	26,000	18,000	18,000	18,000	8,000
Straight-line 3 Year Amortization Rate	33%	33%	33%	0%	0%	0%	0%	0%
Amortization Expense	165,000	165,000	165,000	-	-	-	-	-
Income Tax Benefit	66,000	66,000	66,000	-	-	-	-	-
Total Income Tax Benefit	94,000	116,000	100,000	26,000	18,000	18,000	18,000	8,000
Income Tax Benefit Present Value	276,182							

Property Tax

Indiana True Tax Value Percentage	40%	56%	42%	32%	24%	18%	15%	15%
Property Tax Payments	(6,000)	(8,400)	(6,300)	(4,800)	(3,600)	(2,700)	(2,250)	(2,250)
Present Value of Property Tax Payments	(22,994)							

Benefit of Software Segregation

Income Tax Benefit Increases	25,204
Property Tax Payment Reductions	22,994
Total Present Value of Benefits	48,198

E. How Vendors Can Increase Revenues

Feature set notwithstanding, one of the biggest barriers a vendor faces when they are marketing large capital equipment is the equipment's cost. Vendors build elaborate ROI models to demonstrate the operating efficiency of their equipment. They use these models to convey how that efficiency improves the customer's bottom line through reduced operational staff, longer maintenance cycle times, higher yields, etc. What these ROI models generally do not address is the list price of the equipment.

Vendors that can properly value and itemize the list price of software embedded in their equipment at the time of sale may save their customers considerable sums because of the tax advantages demonstrated here. Vendors that make it easy for their customers to claim these benefits stand to lower the effective cost of the equipment compared to their competition. The vendor will sell more equipment because they can better compete on price issues with their competition.

The problem is that many vendors do not have a good feel for the value of embedded software amortized in their equipment. This may be due to many factors. Some examples may include cost accounting systems not configured to track such costs, or the integration of component parts that contain software with an undeclared value. This makes it difficult for the vendor to include therefore the list price of the software on their invoices.

Vendors, like taxpayers, can contract with professional software appraisers determine the embedded software content of their equipment. Once they have the completed appraisal, the vendor can then itemize the software's value on their invoices for their customers.

III. CONCLUSIONS

This paper has addressed the following:

1. Equipment vendors increasing use of embedded application software in large capital equipment used in the electrical manufacturing and coil winding industry.
2. That there are tax benefits attributable to this embedded application software at the state and

federal level, and the general requirements for claiming these tax benefits. These requirements included the determination of the software's cost at the time of acquisition, either by specific itemization by the vendor on their invoice, or via an independent, professional software appraisal.

3. An example demonstrating how these tax benefits accumulate at the state and federal levels. It was shown how a \$1,000,000 asset with a 50% software content using full tax benefits gives the company a of the acquisition cost of the equipment.
4. How vendors that properly itemize the cost of software embedded in their equipment could create additional value for their customers through increased ROI and a lower effective equipment cost. This lower effective cost may help vendors increase revenues.

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