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Half Full or Half Empty? A Look at the New Research Credit Regulations for Software

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Introduction

- In today's economy, software development is no longer restricted to companies whose business is creating software packages for sale to third parties.
- Many companies now use software to run their business and interact with their customers.
- Taxpayers' ability to claim the research credit depends largely on whether such software is classified as internal use software, which until recently had not been defined by regulation.
- Given the increasingly pervasive use of software in every facet of the economy, additional clarity on what constitutes internal use software was needed.

Statutory History

- In 1986, Congress provided that “except to the extent provided in regulations,” software developed “primarily for internal use by the taxpayer” was excluded from the definition of qualified research.
- Since 2001 Treasury and the IRS have made multiple attempts at drafting regulations to further define “internal use software.”
- Treasury issued final regulations on October 3, 2016 which provide rules that will enable many companies to avoid the more burdensome requirements for internal use software.
- At the same time, the new regulations require taxpayers to plan more carefully at the outset of software development projects and raise questions about the treatment of certain “dual function” software.

Agenda

- Impact of the new section 41 regulations on all software development projects.
- Review of the new standards for classifying software as internal use and strategies for establishing how your software should be classified.
- Review of the High Threshold of Innovation Test for internal use software and strategies for satisfying that test.

APPLYING THE 4-PART TEST TO SOFTWARE DEVELOPMENT

Statutory Requirements of Section 41

- Section 41's 4-part test for qualified research applies to all software development.
 - The expenditures are research and development costs “in the experimental or laboratory sense” (Section 174 test);
 - The research must be undertaken to discover technological information (Technological Information Test);
 - The research is “intended to be useful in the development of a new or improved business component of the taxpayer” (Business Component Test); and
 - “Substantially all” of the research and experimentation activities “constitute elements of a process of experimentation” (Process of Experimentation Test).

Simply Choosing Between Alternatives is Not a Process of Experimentation

- Example 9: X, a manufacturer, wants to install an ERP system that runs off a single database so that X can track orders more easily, and coordinate manufacturing, inventory, and shipping among many different locations at the same time. X evaluates its business needs and the technical requirements of the software, such as processing power, memory, storage, and network resources. X devotes the majority of its resources in implementing the ERP system to evaluating the available templates, reports, and other standard programs and choosing among these alternatives in configuring the system to match its business process and reengineering its business process to match the ERP system. See Treas. Reg. § 1.41-4(a)(8)(Example 9).

Simply Choosing Between Alternatives is Not a Process of Experimentation

- Example 9 Conclusion: X's activities related to the ERP software are not qualified research activities under section 41(d)(1).
 - X did not “conduct a process of evaluating alternatives in order to eliminate uncertainty regarding the development of software.”
 - X's activities in “choosing between available templates, reports, and other standard programs and conducting data transfer are not elements of a process of experimentation.” See Treas. Reg. § 1.41-4(a)(8)(Example 9).

Evaluating Alternatives to Eliminate Design Uncertainty is Qualified Research

- Example 8: X must develop “load balancing software across a server cluster supporting multiple web applications.” X’s web applications operate in a dynamic, highly volatile environment and X is “uncertain of the appropriate design of the load balancing algorithm, given that the existing evolutionary algorithms did not meet the demands of their highly volatile web environment.” X designs and systematically tests and evaluates several different algorithms that perform the load distribution function. See Treas. Reg. § 1.41-4(a)(8)(Example 8).

Evaluating Alternatives to Eliminate Design Uncertainty is Qualified Research

- Example 8 Conclusion: X's activities involving the design, evaluation, and systematic testing of several new load balancing algorithms meet the requirements of section 41. X's activities constitute elements of a process of experimentation because
 - X identified uncertainties;
 - identified alternatives intended to eliminate those uncertainties; and
 - systematically evaluated those alternatives. See Treas. Reg. § 1.41-4(a)(8)(Example 8).

WHEN IS YOUR SOFTWARE
“PRIMARILY FOR INTERNAL USE?”

General Rule for Internal Use Software

- Research with respect to software that is developed primarily for the taxpayer's internal use is eligible for the credit only if the research
 - Satisfies the 4-part test for qualifying research under § 41(d)(1); and
 - Satisfies the high threshold of innovation test. Treas. Reg. § 1.41-4(c)(6)(i).
- Section 41(d)(4)(E) provides an important exclusion from the internal use software rules for certain type of software, specifically:
 - Software used in an activity that constitutes qualified research or
 - Software used in a production process that satisfies the 4-Part Test for qualified research.

Definition of Internal Use Software

- The regulations provide that software is developed “primarily for internal use” if it is for use in “general and administrative functions that facilitate or support the conduct of the taxpayer’s trade or business.” Treas. Reg. § 1.42-4(c)(6)(iii)(A).
- The regulations list three categories of general and administrative functions (§ 1.42-4(c)(6)(iii)(B)):
 - Financial management;
 - Human resource management; and
 - Support services that “support the day-to-day operations of the taxpayer.”

Financial Management

- Financial management functions are “functions that involve the financial management of the taxpayer and the supporting recordkeeping.” Treas. Reg. § 1.41-4(c)(6)(iii)(B)(1).
- Financial management functions include:
 - Accounts payable and accounts receivable
 - Inventory management
 - Budgeting
 - Cash management
 - Accounting and general ledger bookkeeping
 - Risk management
 - Tax compliance

Human Resource Management

- Human resource management functions are “functions that manage the taxpayer’s workforce.” Treas. Reg. § 1.41-4(c)(6)(iii)(B)(2).
- HR management functions include:
 - Recruiting and hiring
 - Employee training
 - Maintenance of personnel records
 - Payroll
 - Benefits

Support Services

- Support services are “other functions that support the day-to-day operations of the taxpayer.” Treas. Reg. § 1.41-4(c)(6)(iii)(B)(3).
- Support services include:
 - Data processing
 - Facility services such as grounds keeping and janitorial services
 - Graphic services
 - Marketing
 - Legal services
 - Government compliance services

Example 4 – Support Services

- Example 4: X, a restaurant, develops software for a website that provides information, such as items served, price, location, phone number, and hours of operation for purposes of advertising. At the beginning of the development, X does not intend to develop the website software for commercial sale, lease, license, or to be otherwise marketed to third parties . . . X intends to use the software for marketing by allowing third parties to review general information on X’s website.” Treas. Reg. § 1.41-4(c)(6)(viii).
- Conclusion: The software is developed for use in a general and administrative function because marketing is a support service function.

Software That is Not Primarily Internal Use

- Software is not developed primarily for internal use if it is not developed for use in one of the three categories of general and administrative functions. Treas. Reg. § 1.41-4(c)(6)(iv).
- The regulations provide 2 primary examples of software that is not developed for use in a general or administrative function:
 - “Software developed to be commercially sold, leased, licensed, or otherwise marketed to third parties, or
 - Software developed to enable a taxpayer to interact with third parties or to allow third parties to initiate functions or review data on the taxpayer’s system.” Treas. Reg. § 1.41-4(c)(6)(iv)(A)-(B).

Example 7 – Third Party Interaction

- Example 7: X, a manufacturer of various products, develops software for a website with the intent to allow third parties to access data on X's database, to order X's products and track the status of their orders online. At the beginning of the development, X does not intend to develop the website software for commercial sale, lease, license, or to be otherwise marketed to third parties.
- Conclusion: The software is not developed primarily for internal use because it is not developed for use in a general or administrative function. X developed the software to allow third parties to initiate functions or review data on the taxpayer's system . . ." Treas. Reg. § 1.41-4(c)(6)(viii).

Definition of “Third Party”

- Beware how the regulations define third party; not all third party interaction will remove your software from the internal use software rules.
- For purposes of determining whether software enables third party interaction, the term “third party” generally includes any “corporation, trade or business, or other person that is not treated as a single taxpayer with the taxpayer” for purposes of section 41.
- However, third parties for this purpose “*do not include any persons that use the software to support the general and administrative functions of the taxpayer.*” Treas. Reg. 1.41-4(c)(6)(vi)(E) (emphasis added).

Example 6 – Third Party Interaction

- Example 7: X develops software to interact electronically with its vendors to improve X's inventory management. X develops the software to enable X to interact with vendors and allow vendors to initiate functions or review data on the taxpayer's system . . . X's software allows a vendor to request X's current inventory of the vendor's product, and allows a vendor to send a message which informs X that the vendor has just made a new shipment of the product to replenish X's inventory.
- Conclusion: X's vendors are not third parties for purposes of the internal use software rules. While X's software was developed to allow vendors to initiate functions or review data on the taxpayer's system, the software was developed to allow vendors to support X's inventory management, which is a general and administrative function. Treas. Reg. § 1.41-4(c)(6)(viii) (example 6).

Time and Manner of Determination

- The regulations place emphasis on “the intent of the taxpayer and the facts and circumstances at the beginning of the software development” when determining whether the software is developed primarily for internal use. Treas. Reg. § 1.41-4(c)(6)(v).
 - If a taxpayer originally develops software for internal use but later makes improvements with the intent that elements of the software would interact with third parties, the improvements are considered “separate from the existing software.”
 - The bifurcation principle also applies to any alternations made to software originally intended to be exclusively for non-internal use.

Satisfying the Intent Requirement

- The requirement that taxpayers demonstrate the software's intended use at the outset of the software's development may force taxpayers to establish new documentation procedures for software projects.
 - Prior to the new regulations, there was no need for taxpayers to document at the outset what the primary use for the software will be.
- Comments to the proposed regulations pointed out that projecting future usage of software at the beginning of the project will be difficult given that software development is an iterative process in which functionality and user interfaces evolve rapidly.

Documentation Establishing Intended Use

- Project Plans are just as helpful in the software context as they are with qualifying other types of research activity.
 - Project Plans provide a plain English description of overall project objectives that is easily accessible to non-engineers.
 - Project Plans in many ways are the most helpful documents in substantiating your research activities.
- Project Plans may already contain information about how the software is intended to interact with customers.
- If this type of information is not already captured, taxpayers might consider including a standard question or prompt at the beginning of software planning documents asking engineers to explain the intended use of the program.

Dual Function Software

- The regulations contain new rules that apply to software developed both for use in general or administrative functions and to enable the taxpayer to interact with third parties (“Dual Function Software”).
- Subject to the exceptions below, dual function software is internal use software.
- To the extent taxpayers can “identify a subset of elements of dual function software that only enables a taxpayer to interact with third parties or allows third parties to initiate functions or review data,” such subset is not internal use software. Treas. Reg. § 1.41-4(c)(6)(vi)(B).
- If a third party subset is identified, expenditures associated with its development will thus qualify for the credit if those activities meet the traditional 4-part test for qualifying research under § 41(d)(1).

Dual Function Software Safe Harbor

- The regulations acknowledge that it may be difficult or impossible to partition dual function software into those subsets that only interact with third parties and those that are strictly internal use.
- If dual function software or any subset of such software cannot be identified as strictly third party interfacing, the regulations allow taxpayers to claim 25% of the qualified research expenditures in computing their credit.
 - Provided, however, that the taxpayer can prove that the *use by third parties* of this software or subset of software is at least *10 percent of its total total use*. Treas. Reg. § 1.41-4(c)(6)(vi)(C).

Example 11: Dual Function Safe Harbor

- Example 12: X develops software for use in general and administrative functions that facilitate or support the conduct of X's trade or business and to allow third parties to initiate functions. X is able to identify a third party subset. X incurs \$50,000 of research expenditures for the software, 50% of which is allocable to the third party subset.
- Conclusion: Because X is able to identify a third party subset, the third party subset is not presumed to be internal use software. Assuming the research activities otherwise meet the requirements of section 41, \$25,000 (50% of 50,000) of the expenditures may be included in computing the amount of X's credit. Treas. Reg. § 1.41-4(c)(6)(viii).

Third Party Subset

- Software projects often break down the development effort based on the various features that make up the overall software project.
- Tracing work done on individual features may be a method of identifying what activities relate to the third party subset.
- The greater difficulty may be determining the costs that are associated with a particular feature.
- Cost center allocation methods often do not provide a level of detail that would enable one to determine what feature the software engineer was working on.
- Hence, taxpayers may need to establish additional cost tracking regulations to take advantage of the exception for third party subsets.

Example 12: Dual Function Safe Harbor

- Example 12: Same facts as Example 11, except that X is unable to identify a third party subset. X uses an objective, reasonable method at the beginning of the software development to determine that the dual function software's use by third parties to initiate functions is reasonably anticipated to constitute 15% of the dual function software's use.
- Conclusion: Although X is unable to identify a third party subset, X reasonably anticipates that the dual function software's use by third parties will be at least 10% of the dual function software's use. The taxpayer may include \$12,500 (25% * \$50K) of the software research in computing its credit. Treas. Reg. § 1.41-4(c)(6)(viii).

Questions Regarding the Safe Harbor

- Questions remain as to how the safe harbor will work in practice, such as:
 - Will some taxpayers have an incentive to apply the safe harbor test to entire software projects if 25% of the total dual function software is more than the costs associated with the third party subset?
 - How should taxpayers interpret the requirement that a subset of dual function software constitutes “at least 10% of the dual function subset’s use?”
 - How will “use” be defined in this context (i.e. use of *what*)?
 - What type of evidence will taxpayers need to produce in order to meet the 10% use requirement?

THE HIGH THRESHOLD OF INNOVATION TEST

High Threshold of Innovation Test

- Software satisfies the high threshold of innovation test if the taxpayer can establish:
 - The software is *innovative*;
 - The software development involves significant *economic risk*; and
 - The software is *not commercially available* for use by the taxpayer in that the software cannot be purchased, leased, or licensed and used for the intended purpose without modifications that would satisfy the requirements of [the innovation and economic risk elements].” Treas. Reg. § 1.41-4(c)(6)(vii)(A) (emphasis added).

The Innovation Test

- The first prong of the high threshold of innovation test requires taxpayers to show that the software would “result in a reduction in cost or improvement in speed or other measurable improvement, that is substantial and economically significant . . .” Treas. Reg. § 1.41-4(c)(6)(vii)(B).
- The software cannot merely be a different way of accomplishing a particular task; this test is a “measurable objective standard, not a determination of the unique or novel nature of the software . . .” *Id.*

Satisfying The Innovation Test

- Project planning documents may indicate what the company is trying to achieve with the new software in terms of costs or other efficiencies.
- Look also to software requirements documents drafted during the early planning stages for any indication of a measurable technical efficiency (e.g. processing speed or capacity) that the new program was intended to achieve.
- Note that this test is prospective looking only and does not ask taxpayers to measure cost savings or efficiencies once the project is complete.

The Substantial Economic Risk Test

- The regulations provide that “software involves substantial economic risk if the taxpayer commits substantial resources to the development and if there is substantial uncertainty, because of technical risk, that such resources would be recovered within a reasonable period.” Treas. Reg. § 1.41-4(c)(6)(vii)(C).
- This definition has a number of terms that have the potential to generate disputes with the IRS.
 - Substantial resources
 - Substantial uncertainty
 - Technical risk
 - Reasonable period

The Substantial Economic Risk Test

- The concept of looking at whether the resources will be recovered in a reasonable period of time is critical since given enough time and resources, most software problems are capable of being solved.
- Demonstrating technical risk may require working with your development team to articulate what areas of the project are most likely to create difficulties in terms of completing the project on schedule.
 - Risk sections of project documents often mention only the failure to have adequate resources without detailing the complexities that those resources must address.
 - The examples in the regulations suggests the types of issues that the IRS considers to be technical risk.

Satisfying the Economic Risk Test

- Look for project planning documents or budget information that discuss the financial and human resources needed for the project.
- Project status meeting minutes or presentations may hint at aspects of the project that are particularly challenging or time consuming.
- Highlight for your agent the significant design challenges involved in the project that might cause delays or an increase in cost.
- The speed of change in your industry may be a basis for determining what is a reasonable time frame to recover costs from the development project.
- Early communication with your project development team will increase the availability of evidence satisfying these requirements.

Commercial Availability

- The final prong of the test requires that the software “cannot be purchased, leased, or licensed and used for the intended purpose without modifications that would satisfy [the innovation test and the significant economic risk test]”. Treas. Reg. § 1.41-4(c)(6)(vii)(A)(3).
- The regulations clearly indicate that credit claims for implementing a large ERP system will face scrutiny but if your facts made successful implementation of the system questionable, you may still have a basis for a claim.
- Large development projects may involve purchasing smaller software packages that can perform certain targeted functions.
 - You will want to be able to explain how these packages are only components in the larger project for which no software is available.

Conclusion

- The new regulations provide much needed clarity on the definition of internal software that help many taxpayers avoid the more challenging high threshold of innovation test.
- At the same time, establishing to the satisfaction of the IRS what the intended use of your software is at the outset of its development may prove especially difficult.
- In addition, the new regulations leave many unanswered questions regarding the treatment of dual function software and the application of the high threshold of innovation test.
- In the end, how optimistic one is about the impact of the new regulations is a classic case of whether the glass is half full or half empty.