

Financial Guide for Converting Perpetual Software Licenses to Software as a Service (SaaS)

Tools and guidance to help determine if converting to SaaS makes financial sense.



About DoD ESI

The DoD ESI was formed in 1998 by Chief Information Officers at the DoD. To save time and money on commercial software, a joint team of experts was formed to consolidate requirements and negotiate with commercial software companies, resulting in a unified contracting and vendor management strategy across the entire department. Today, DoD ESI's mission extends across the entire commercial IT life-cycle to include IT hardware products and services. DoD ESI has established DoD-wide agreements for thousands of products and services.

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Table of Contents

Purpose of Guide	4
History of Software Licensing – Perpetual Model	4
Current Environment of SaaS Licensing and Cloud Computing	5
Framework for Financial Analysis of Perpetual to SaaS	6
Financial Analysis Parameters and Factors to be Established	9
Timeframe(s) Used	9
Discount Rate (if performing Net Present Value (NPV)/Discounted Cash Flow (DCF)	9
Financial Model Provision & Discussion	10
Summary	11

The Purpose of this Guide

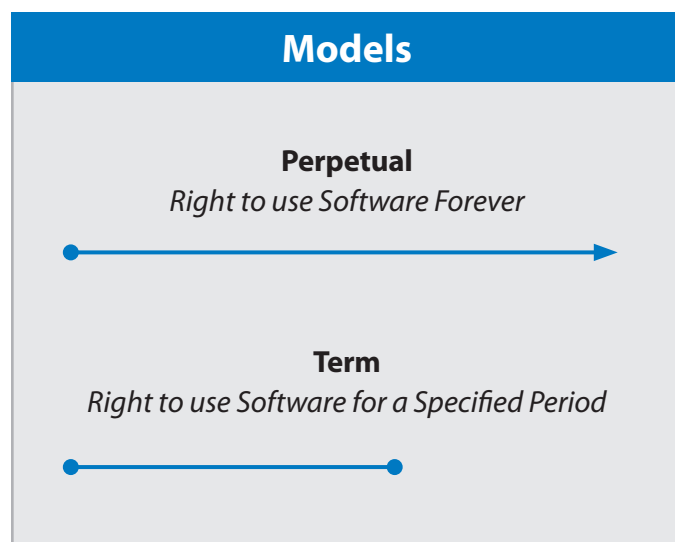
This guide is intended for organizations that currently utilize Perpetual Software licenses and are evaluating if it makes business sense to convert to Software as a Service (SaaS) or continue to operate under a Perpetual licensing arrangement. This guide provides a methodology for estimating and comparing the Total Cost of Ownership (TCO) of future operations under the two scenarios Perpetual or SaaS.

History of Software Licensing – Perpetual Model

In the early age of computing, software was often an afterthought to hardware, even though it was the software that provided instructions to the hardware to execute tasks performed by both hardware and software. Software was traded around the early computing circles, usually without any fees paid or claims of intellectual property rights or other forms of ownership.

As the Information Technology (IT) industry blossomed, the value of software was recognized, and developers and creators (Publishers) of the software used copyrights and other methods to establish their rights as the intellectual property owner. The most common method of obtaining consideration for others to use the intellectual property of the Publisher was to charge a fee to license the use of the software. The standard license was for perpetual use of that software, bounded by some measure of quantity of use (i.e. – number of Named Users) and terms and conditions that established usage rights.

Often additional fees needed to be paid for services and support, such as product enhancements, bug-fixes, education, and other supplies and services related to the software. For the past 20 years, the Perpetual Model of software licensing has been the predominant licensing method in the IT industry. Some software companies offered users the ability to use the software for a set period of time (Term) for a fee that was significantly less than the price of a Perpetual License. However, if the Term License was renewed enough times, the total fees paid for the Term License would approach and eventually greatly exceed the price of a perpetual license. Licensees saw Term Licenses as a means of limiting up-front costs, while licensors saw Term Licenses as a means of establishing a steady revenue stream, instead of the all or nothing revenue recognized upon sale of a Perpetual License.



Current Environment of SaaS Licensing and Cloud Computing

As software and technology have gotten more complicated and integrated, Publishers and System Integrators have been offering a single vendor solution for software centric IT needs called Software as a Service (SaaS). Common elements of an IT solution appear as a stack of components as shown in figure below. While other solutions only provide some of the components in the stack, SaaS provides the entire stack as an all-encompassing solution, available from vendors for one fee per period of use (i.e. month, quarter, annual, etc.). Thus, the SaaS vendor provides all the networking, software, hardware, and services to provide the solution. Often, SaaS (a licensing model) is delivered via the Cloud (a technology method), although some use the two terms (SaaS and Cloud) interchangeably.

Software as a Service
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking

For situations where the Publisher/License Grantor has discontinued Perpetual Licensing and now is only offering SaaS/Cloud offerings, there are three approaches:

1. Evaluate your contract and discuss with Licensor to determine the length of time (if any restriction exists such as product/version support issues), that you are able to continue operating under existing Perpetual licensing. Use this Financial Guide and associated Workbook to determine the TCO of continued Perpetual License operations. Common costs to be identified and analyzed include configuration and interface integration, maintenance, customizations, etc.
2. Accept that you may have to convert to SaaS/Cloud. Use this Financial Guide and associated Workbook to determine the TCO of SaaS/Cloud operations and negotiate as many concessions on SaaS/Cloud licensing as possible (discounts, license credits, favorable terms, etc.)
3. Begin Acquisition Planning for a re-compete of your requirements from alternate Publishers (not just resellers of the current Licensor). This not only starts the process should you need to replace vendors, but also sends a legitimate signal to the market and to the current vendor that you are revisiting your current operations to ensure you receive Best Value going forward. Use this Financial Guide and associated Workbook and other existing ESI Financial Tools (Best Value Toolkit, SaaS Toolkit, etc.) to estimate the TCO of alternative solutions that arise out of the new competition.

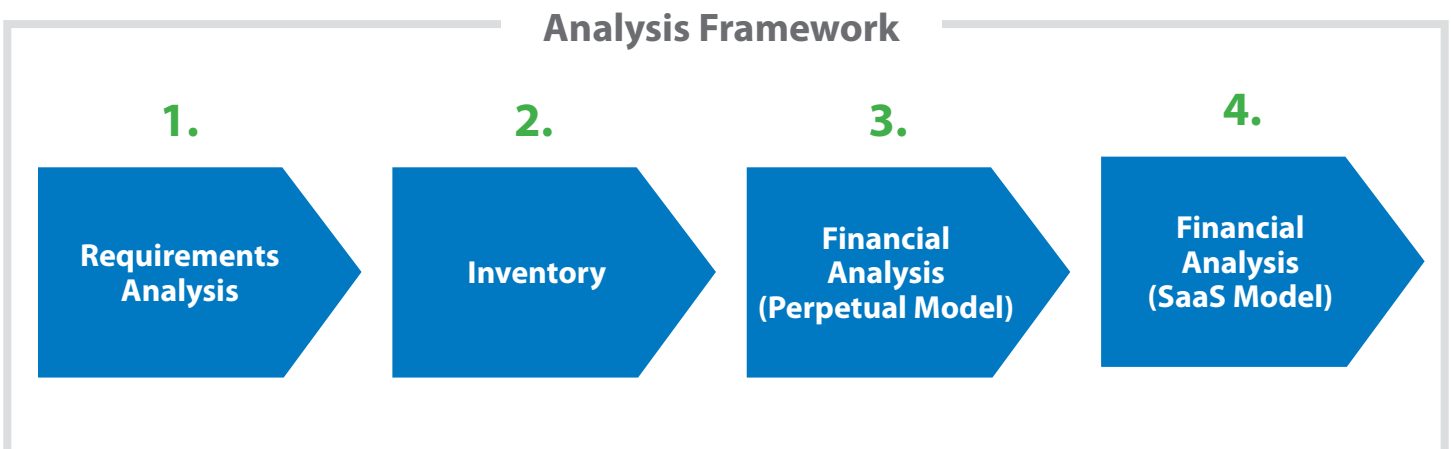
Framework for Financial Analysis of Perpetual to SaaS

Given the above information and utilizing the process outlined below (and the associated “Perpetual to SaaS Cost Model” Workbook), a detailed Total Cost of Ownership (TCO)/Life Cycle Cost (LCC) Estimate of the Cost/Benefit of converting from Perpetual Licensing to SaaS may be performed.

While the following Framework provides significant detail and processes for performing an analysis of

the financial viability of a significant Perpetual to SaaS conversion, the same process and financial analysis can be used to evaluate smaller and or less significant Perpetual to SaaS to conversions. This should be done by scaling back the details and financial data to best fit the size and significance of the potential conversion.

The following narrative describes the framework of the process of performing a financial analysis of converting from Perpetual licensing to SaaS. The following four steps are the cornerstones of this analysis:



1. Perform a detailed Requirements Analysis of all Operation Needs

Utilizing a Work Breakdown Structure (WBS) or other formal data capture method, develop a complete list of all existing and likely future requirements for system operations. This methodology should contain a listing of all requirements to the lowest level of detail, and should have columns for filling in the means of meeting those requirements under continued perpetual operations as well as columns for filling in the means of meeting those requirements under SaaS operations.

All existing or required customizations must be documented including RICEF (Reports, Interfaces, Conversions/Customizations, Extensions, and Forms). This Requirements Document serves as the master specification for any system/software to be utilized or acquired.

2. Perform a detailed inventory of all existing IT and Software assets

Under the discipline of ITAM/SAM, capture your entire inventory of software (and other IT) assets. Identify the subset (if applicable) of assets that will be no longer be required under SaaS operations. Identify those assets that are needed to meet your requirements. Any assets not in inventory or properly licensed, are to be priced and added to your financial analysis of continuing under Perpetual Licensing. Any assets not required under SaaS licensing, and redundant or not required by other systems, are to be disposed of, either through transfer (if allowed) to other DoD operating entities, sold as used equipment (software licenses most likely may not be resold), or disposed of with cost incurred. Software assets should be quantified (count and approximate value), so that we may attempt to receive license credits from the SaaS provider if offered, likely only if the SaaS provider received earlier revenue from the software when originally purchased.

3. Perform a financial analysis of continued Perpetual Licensing Operations (Timeframe 5, 10, and/or 15 Years)

Using the associated “Perpetual to SaaS Cost Model” workbook, fill in all costs of continued Perpetual Licensing operations in the ‘Continued Perpetual’ worksheet. Every estimated future cost should be estimated by amount and by year. Cost should include, but by no means are limited to:

Fees to be paid to Perpetual License Vendors/ Contractors

- Software Maintenance
- Support Services
- Education
- Update/Upgrade Fees

Associated Costs

- Internal Labor
- Associated Supplies or Services (Fees to other Vendors/Contractors)

Perpetual to SaaS Conversion Cost Analysis Tool											
Continued Perpetual License Option	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
License Acquisition Data											
Initial Acquisition Price											
Additional License Purchases			\$10,000	\$50,000					\$20,000		\$80,000
Upgrade Fees						\$1,250,000					\$1,250,000
Total License Costs			\$10,000	\$50,000		\$1,250,000			\$20,000		\$1,330,000
Maintenance/Support Data											
Annual Support Initial Acq.	\$1,200,000	\$1,242,000	\$1,285,470	\$1,330,461	\$1,377,027	\$1,425,223	\$700,000	\$724,500	\$749,858	\$776,103	\$10,810,642
Annual Support Add. Purchases			\$15,000	\$25,000	\$35,000	\$35,000	\$40,000	\$45,000	\$50,000	\$50,000	\$295,000
Annual Support Upgrade							\$480,000	\$496,800	\$514,188	\$532,185	\$2,023,173
Total Maintenance/Support Costs	\$1,200,000	\$1,242,000	\$1,300,470	\$1,355,461	\$1,412,027	\$1,460,223	\$1,220,000	\$1,266,300	\$1,314,046	\$1,358,288	\$13,128,815
Education/Training Costs	\$5,000	\$50,000	\$5,000			\$25,000	\$15,000				\$100,000
Consulting Services (CS) Costs	\$15,000	\$20,000				\$50,000	\$10,000				\$95,000
Customization of COTS Product Costs		\$10,000				\$20,000					\$30,000
Hardware Data											
Hardware Product Spending		\$18,000				\$150,000					\$168,000
Hardware Maintenance		\$12,000	\$15,000	\$18,000	\$18,720	\$19,469	\$42,000	\$43,680	\$45,427	\$47,244	\$261,540
Total Hardware Costs		\$30,000	\$15,000	\$18,000	\$18,720	\$169,469	\$42,000	\$43,680	\$45,427	\$47,244	\$429,540
Other Costs/Spending											
Certification						\$12,500					\$12,500
Audit		\$15,000		\$3,000				\$3,000			\$21,000
Misc			\$11,000		\$5,000			\$17,000			\$33,000
Total Other Costs		\$15,000	\$11,000	\$3,000	\$5,000	\$12,500		\$20,000			\$66,500
Cloud/SaaS/Hosting Fees*											
Software License Portion											
Maintenance Portion											
Hardware & Other Cost Portion											
Total Cloud/SaaS/Hosting Costs**											
Total Cost All Elements	\$1,220,000	\$1,367,000	\$1,341,470	\$1,426,461	\$1,435,747	\$2,987,192	\$1,287,000	\$1,329,980	\$1,379,473	\$1,405,532	\$15,179,855
2.8% NPV	\$1,220,000	\$1,329,767	\$1,269,389	\$1,313,048	\$1,285,599	\$2,601,942	\$1,090,485	\$1,096,209	\$1,106,034	\$1,096,233	\$13,408,706

* The Cloud/SaaS/Hosting offer may incur costs in addition to the Monthly Fee, such as Education and Consulting Services. If so, include these costs above.

4. Perform a financial analysis of SaaS Licensing Operations (Timeframe 5, 10 and/or 15 Years)

Using the associated “Perpetual to SaaS Cost Model” workbook, fill in all costs in the “Convert to SaaS” worksheet. Every estimated future cost (not limited to the direct cost to the SaaS provider) should be estimated by amount and by year. Costs should include, but by no means are limited to:

Costs of Conversion

- Fees to SaaS License Vendors/Contractors
- Internal Conversion Costs (RICEF and other Customizations)
- Asset Disposition Costs
- Associated Supplies or Services (Fees to other Vendors/Contractors)

Potential Conversion Savings/Cost Recovery

Perpetual to SaaS

- Potential License Credits
- Potential Support Credits
- Asset Disposition Costs/Fees
- Associated Supplies or Services (Fees to other Vendors/Contractors)

Costs of Continuing SaaS Operations

- Fees to SaaS License Vendors/Contractors (Broken down by Component if Available)
 - Software
 - Software Maintenance
 - Hardware/Servers
 - Storage
 - Support
 - Etc.
- Associated Ongoing Costs of SaaS
 - Internal Labor
 - Internal Version/Upgrade Management
 - Ongoing Conversion Maintenance for New Versions/Upgrades
 - Associated Supplies or Services (Fees to other Vendors/Contractors)

Perpetual to SaaS Conversion Cost Analysis Tool												
Conversion to SaaS	Initial Year	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total	
License Acquisition Data												
Initial Acquisition Price												
Additional License Purchases												
Upgrade Fees												
Total License Costs												
Maintenance/Support Data												
Annual Support Initial Acq.												
Annual Support Add. Purchases												
Annual Support Upgrade												
Total Maintenance/Support Costs												
Education/Training Costs	\$150,000	\$50,000	\$25,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$260,000	
Consulting Services (CS) Costs	\$50,000	\$10,000									\$60,000	
Configuration of COTS Product Costs	\$1,500,000		\$100,000		\$100,000			\$100,000			\$1,800,000	
Hardware Data												
Hardware Product Spending	\$55,000	\$12,500									\$67,500	
Hardware Maintenance		\$8,000	\$9,500	\$9,880	\$10,275	\$10,686	\$11,113	\$11,558	\$12,020	\$12,501	\$95,533	
Total Hardware Costs	\$55,000	\$20,500	\$9,500	\$9,880	\$10,275	\$10,686	\$11,113	\$11,558	\$12,020	\$12,501	\$163,033	
Other Costs/Spending												
Certification	\$50,000				\$12,500						\$62,500	
Audit		\$15,000		\$3,000							\$18,000	
Misc												
Total Other Costs	\$50,000	\$15,000		\$3,000	\$12,500						\$80,500	
Cloud/SaaS/Hosting Fees*												
Software License Portion	\$950,000	\$983,250	\$1,017,664	\$1,053,282	\$1,090,147	\$1,128,302	\$1,167,793	\$1,208,666	\$1,250,969	\$1,294,753	\$11,144,826	
Maintenance Portion	\$230,000	\$238,050	\$246,382	\$255,005	\$263,930	\$273,168	\$282,729	\$292,625	\$302,867	\$313,467	\$2,698,223	
Hardware & Other Cost Portion	\$35,000	\$36,225	\$37,493	\$38,805	\$40,163	\$41,569	\$43,024	\$44,530	\$46,089	\$47,702	\$410,600	
Total Cloud/SaaS/Hosting Costs**	\$1,215,000	\$1,257,525	\$1,301,539	\$1,347,092	\$1,394,240	\$1,443,039	\$1,493,546	\$1,545,821	\$1,599,925	\$1,655,922	\$14,253,649	
Total Cost All Elements	\$3,020,000	\$1,353,025	\$1,436,039	\$1,364,972	\$1,522,015	\$1,458,725	\$1,509,659	\$1,662,379	\$1,616,945	\$1,673,423	\$16,617,182	
2.8% NPV	\$3,020,000	\$1,316,172	\$1,358,877	\$1,256,448	\$1,362,845	\$1,270,597	\$1,279,146	\$1,370,182	\$1,296,434	\$1,305,172	\$14,835,873	
* The Cloud/SaaS/Hosting offer may incur costs in addition to the Monthly Fee, such as Education and Consulting Services. If so, include these costs above.												
** If the Vendor does not break out Cloud/SaaS/Hosting Fees by sub-element (License, Maintenance, Hardware/Other), instead quoting one amount, enter that single amount by year in Row 37												

Financial Analysis Parameters and Factors to be Established

Once all estimated costs are identified, two decisions should be made before utilizing the Cost Model: Timeframe of the Analysis and Discount Rate to be used (if choosing to employ Net Present Value (NPV) methodology).

Timeframe(s) Used

To establish a true TCO/LCC Estimate, the anticipated duration of the system/software needs to be established. By analyzing all years of spending, and comparing the total cost of one alternative to total

cost of the other alternative, an informed decision can be made in light of current and future funding requirements. One note, often the longer the timeframe, the more frequently it is found that the TCO/LCC of Perpetual Licensing is lower than the cost of annual SaaS expenditures.

Discount Rate (if performing Net Present Value (NPV)/Discounted Cash Flow (DCF)

When commercial firms perform multi-year cost estimates, they apply a “Discount Rate” to be used on all future expenditures and cash inflows.

The terms Hurdle Rate, and Net Present Value rates

are sometimes used in place of “Discount Rate”. What the Discount Rate does is value future costs less than current costs, under the philosophy that inflation, escalation and risk make the value of future dollars lower than dollars in hand. Overall, this type of theory/analysis is titled “Discounted Cash Flows” (DCF) or Net Present Value (NPV) analysis.

The Federal Government has historically and continues to suggest the same type of analysis be performed (see Circular A-94, “GUIDELINES AND DISCOUNT RATES FOR BENEFIT-COST ANALYSIS OF FEDERAL PROGRAMS”). This document may be found at⁽²⁾:

https://www.whitehouse.gov/omb/circulars_a094/

Current Guidance on Discount Rates to be used can be found at⁽³⁾:

https://www.whitehouse.gov/omb/circulars_a094/a94_appx-c

Financial Model Provision & Discussion

Once all anticipated costs of both alternatives are entered into the model (and financial benefits added (if applicable) as negative costs, the Summary Worksheet provides total cost of each alternative (both in Raw Dollars and in NPV), and a breakdown of cost by year (Raw Dollars Only). This Model is available via a link accompanying this document on the ESI web site.

Remember, Sunk Costs are not to be included in any evaluation – they represent history, not future spending. Refer to the side-bar summary for more information on Sunk Costs.

Recognition of the Concept of Sunk Costs (Cost Previously Incurred)

Prior to exploring the financial costs and benefits of the two license models, and outlining a financial model of converting Perpetual Licenses to SaaS licensing, it is critical to understand the financial concept of “Sunk Costs”. A sunk cost is a cost that an entity has incurred, and which it can no longer recover by any means⁽¹⁾. Financial professionals refer to a normal human emotion of attributing value to sunk costs as the “Sunk Cost Fallacy”. Essentially, it is very normal to allow past expenditures that no longer have any worth to assume value in your decision making, thus compromising rational financial analysis. This situation impacts many IT and other business decisions, and can be illustrated by the following example comment, “I already spent \$1M on that item, so I’m not going to simply abandon it”. That comment may make sense if there is value remaining in the item, but is counterproductive when no value remains in the item and that emotion interferes with rational, “Forward Looking” financial analytics. Many entities investigating the value of SaaS fall into the Sunk Cost Fallacy trap, although as explained below, sometimes you may negotiate some concessions based on your sunk costs when entering a SaaS or other IT contract.

Summary

Discussion of Potential Financial Results

It is common to find that SaaS licensing is less expensive than Perpetual licensing for short term needs. Perpetual Licensing tends to be more cost effective for longer term needs. However, the cost of conversion (customization and tuning) can be far higher than estimated, not only in the initial customization but also in maintaining functionality of customizations as updates and upgrades of software and hardware are issued.

Discussion of Best Value Analysis

While financial analyses provide hard numbers (based on input estimates) from which we can estimate the better financial choice of alternatives, a “Best Value” analysis of operation under all alternatives should also be performed. Just because something is slightly less expensive, if it offers far less operational value for issues such as Security, Speed, Flexibility, Mobility, Collaboration, etc. it most likely does not represent “Best Value”.

Identifying Potential Issues

Any financial analysis is only as good as the estimates that feed the math. When considering whether or not to switch from a Perpetual License Model to a SaaS offering, you must fully understand your requirements, and provide reasonably accurate estimates of current spending requirements and out-year costs. The longer period that you can receive fixed-price out-year cost quotes/options, the more reliable your input estimates will be, and the more accurate your overall analysis will end up.

Obtaining Approval and Stakeholder Buy-In

In order to make a potentially disruptive organizational change, it is best to provide the analysis, Financial and Best Value, to a wide group

of organizational leaders and stakeholders. Buy-in from the team is critical, as they will be the leaders of change, and provide support for the issues that always occur on a system change or implementation. Additionally, input from the team can greatly improve your analysis, as their multi-functional team experience may identify requirements, issues, and costs that were not captured in the initial analysis.

Preparing for Organizational Process Change

In the IT Industry (especially within the Enterprise Resource Planning (ERP) and Application Software environments), it is more cost efficient to adapt as many of your Business Processes to match the functionality of the out-of-the-box Software. The more you customize, the greater the initial up-front implementation or conversion costs are, and even more importantly the greater the long-term spending on ensuring customizations remain fully integrated and functional with the Software Version Updates and Upgrades.

Thus, always seek to minimize software customizations by changing business practices (where operationally and cost efficient) instead of customizing software. Should you determine to explore a Perpetual to SaaS conversion, determine what business processes can best be changed, thus taking full advantage of aligning your system as closely as possible (preferred if an exact fit) to the software/system performance and architecture of the un-customized SaaS offering.

Include a well-documented rationale along with your cost estimates of conversion customization and ongoing customization maintenance as these costs may be extremely significant in determining whether conversion to SaaS is a good business decision. Inaccurate estimates of customization are one of the greatest cost risks in all software transactions.

¹ <http://www.accountingtools.com/questions-and-answers/what-is-a-sunk-cost.html>

² Circular A-94, "GUIDELINES AND DISCOUNT RATES FOR BENEFIT-COST ANALYSIS OF FEDERAL PROGRAMS"

³ Circular A-94. Appendix C

About the Author

John Zettler, Pricing & Contract Finance Subject Matter Expert. John possesses over 30 years of experience in government contract costing, pricing, and program financial management, with particular expertise in IT services and enterprise software acquisition. While serving in various positions (as his career progressed) from analyst through senior management positions with large Government contractors, John has directly provided financial support to several large DoD Programs. He pioneered the use of spreadsheets in direct support of Navy Weapon Systems Acquisition Program Management Offices and has provided financial support to contractors on close to a thousand acquisitions and contracts.

John assisted in the development of Best Practices of Commercial Software Acquisition for DoD ESI (*formerly DoD Enterprise Software Initiative*) and has developed many financial tools and practices in support of DoD ESI.

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