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THE NATIONAL PROPERTY MANAGEMENT ASSOCIATION’S
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Editor’s Column

Ladies and Gentlemen:

You hold, either electronically or physically, the second edition of the NPMA E-Journal of Property and Asset Management! One year ago we published our association’s first edition of the Journal – which was a major leap forward for our association, its membership and our contributing authors. Once again, a fine group of authors have submitted their manuscripts and have been selected for publication. To create this literature, these authors have invested their own time and resources, challenged their intellectual processes, and developed literature in an effort to share their knowledge with the property community.

The three authors selected for this issue of the Journal:
    Mr. Brian Thompson,
    Mr. Larry Miramontes and
    Mr. Michael Showers.

All have contributed well thought out and enlightening articles – with a variety of different approaches.

Mr. Thompson addresses an area where we all need to understand the pitfalls and perils of establishing and maintaining a Property Management System and his analysis is in regard to the availability of software as part of that system – either commercial off the shelf (COTS) packages, custom built solutions and even hybrid systems. Weighing the pros and cons – he provides all of us insight into a critical aspect of the field of property and asset management.

Mr. Larry Miramontes provides us an experiential piece – based upon the research and work of one of our well respected members, Mr. Robert McFarland. Guiding us through the decision making processes as well as the changing requirements of his company's journey, Mr. Miramontes provides replication of the outcomes, the positive outcomes of Mr. McFarland’s original work. In other words, IT CAN BE DONE! Hard work, diligence, perseverance – that blood, sweat and tears for those tough projects – but he has proven that the application of McFarland’s Value Base Asset Management approach is truly value added.

Our last article is a more empirical, traditional research based paper by Mr. Michael Showers. In the world of contract property, Mr. Showers methodically walks us through the concept, regulation and legal cases related to various aspects of contract property. Providing seminal case law with explanation and explication – he expands what for many are simple applications and delves into the detail surrounding that simple application – peeling back the layers to reveal just how complex contract property may be – if applied incorrectly.

Ladies and Gentlemen, you have in front of you the second edition of the Journal of Property and Asset Management. I encourage you to feast upon its treasures!

Dr. Douglas N. Goetz, CPPM, CF
Editor, The Journal of Property and Asset Management
Asset Management Software – Solving the Build vs. Buy Dilemma

Brian E. Thompson, CPPM, CF
Vice President of Solutions,
Strategic Markets at Sunflower Systems

Executive Summary

This article will explore the critical decision points in evaluating commercial-off-the-shelf (COTS) software applications vs. building custom asset management software from scratch, as well as customizing enterprise resource planning (ERP) systems to perform selected asset management functions. A sample matrix will be constructed listing functional goals, IT preferences, risks, resources, cultural basis and other decision factors including weighting criteria. Organizations could tailor this framework to perform an analysis and quantify the ideal path for deploying asset management technology for a given project.

The Dilemma

When business requirements dictate, or when new regulations are introduced (such as updates to the Defense Federal Acquisition Regulation Supplement (DFARS) or Item Unique Identification (IUID), organizations are faced with making an important decision regarding their asset management software. Should they purchase a commercial-off-the-shelf (COTS) product and configure it to address their business requirements, build a custom application from scratch or continue to use their existing systems with modifications? This is a crucial decision than can have huge cost implications – it’s one of those “you bet your job” choices in which you pray you make the right one.

In order to avoid making a bad or uninformed decision, one must carefully analyze the business requirements, COTS options, development resources, costs, budget, risk tolerance and political climate. In other words, do your due diligence. Some organizations believe their operations are so unique that no COTS solution will address their needs, and the only option is to create their own application or customize an ERP system. In contrast, others believe a COTS application will be cheaper, less risky and be able to meet or exceed their requirements. Who’s right? Well, as Dr. Doug Goetz often states, “it depends.”

As we begin to discuss and evaluate the various options, it’s important to recognize the possible benefits, challenges, risks and costs of each.
<table>
<thead>
<tr>
<th></th>
<th>Commercial-Off-The-Shelf (COTS) Solution</th>
<th>Custom-Built Solution</th>
<th>Hybrid ERP Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Defined</strong></td>
<td>An already developed application which can easily be obtained from a vendor.</td>
<td>A solution that is custom built from scratch internally or by a vendor.</td>
<td>Adding custom code to an ERP solution to perform functions not present in the current application.</td>
</tr>
</tbody>
</table>
| **Possible Benefits**          | • Typically lower long-term/overall costs and risk  
• Higher quality  
• “Best Practices” functions used by other organizations  
• Immediate availability  
• Best of breed functionality with ability to interface to other systems  
• Vendor responsible for technology issues/error correction  
• Vendor keeps you current as forms/interfaces change over time | • Will best address your functional requirements  
• Complete control over the development process and future enhancements  
• Can be leveraged to possibly create a competitive advantage | • Eliminate the need for another application  
• No need for interfaces  
• High degree of customization could be supported  
• Typically lower cost than custom but higher the COTS solution |
<table>
<thead>
<tr>
<th>Possible Challenges and Risks</th>
<th>Commercial-Off-The-Shelf (COTS) Solution</th>
<th>Custom-Built Solution</th>
<th>Hybrid ERP Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Long-term vendor viability</td>
<td>• Availability of persons with proper skill sets</td>
<td>• Time to create custom code</td>
</tr>
<tr>
<td></td>
<td>• Application must address business requirements</td>
<td>• Time to develop application</td>
<td>• Risk of failure</td>
</tr>
<tr>
<td></td>
<td>• Technology consistent with organizations IT policies</td>
<td>• Risk of failure</td>
<td>• Might interfere with other ERP projects/priorities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs to Consider</th>
<th>Commercial-Off-The-Shelf (COTS) Solution</th>
<th>Custom-Built Solution</th>
<th>Hybrid ERP Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• High short-term costs (inc. license/database fees)</td>
<td>• High development, testing and QA costs</td>
<td>• Moderate development, testing and QA costs</td>
</tr>
<tr>
<td></td>
<td>• Infrastructure costs (servers, databases, networks, etc.)</td>
<td>• Infrastructure costs (servers, databases, networks, etc.)</td>
<td>• Infrastructure costs (servers, databases, networks, etc.)</td>
</tr>
<tr>
<td></td>
<td>• Annual vendor support</td>
<td>• Internal training and support</td>
<td>• Internal training and support</td>
</tr>
<tr>
<td></td>
<td>• Training</td>
<td>• Opportunity costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Possible customization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Commercial-Off-The-Shelf (COTS) Solutions**

Typically, the initial short-term costs of implementing a COTS-based solution are higher than a custom solution, but in general a COTS solution will provide the best Return on
Investment (ROI) over the long term. Most of these long-term cost savings are derived from:

- The costs of development and maintenance are spread across a large customer base and leading vendors routinely invest millions in on-going product R&D efforts
- The software vendor is taking on the responsibility of adapting the product to advances in technology, new regulatory reports and/or changes to interfaces (EPEAT, UID Registry/WAWF, PCARSS, etc.)
- The software vendor is responsible for isolating and correcting any technical operating issues
- The software vendor provides a clearly defined data migration and upgrade plan for continuous product enhancements

Selecting a COTS solution can provide very real benefits and advantages including:

- **Add structure to poor business process.** If the new asset management solution supports the use of voluntary consensus standards (VCS) the adoption of some of those may improve overall operations resulting in lower costs and risks. Also, most vendors work with their User Groups to enhance their applications usability and solicit other ideas to further enhance the application. When organizations build their own system, they are unable to leverage the managerial methods from dozens of their peer organizations with similar business requirements – in effect, putting them at a significant competitive disadvantage in managing their organization’s assets.
- **Higher quality application.** Obviously, this is not a given. However, for a mature application with dozens or even hundreds of installations being used by thousands of users, errors are tracked, corrected, tested and leased by the vendor.
- **Implemented faster.** Since the programming and development of a COTS solution has already been done, you will be able to go live sooner than if you developed a solution from scratch. If you need to quickly deploy a solution for a new program, contract, agreement or as part of a corrective action plan to address audit concerns, a COTS solution has substantial advantages from a time perspective.
- **Ability to have best of breed asset management functionality with the ability to interface to/from ERP systems.** You’ll be able to leverage the specialized functionality in an asset management system while also sharing financial, inventory, custody, HR and other data with existing ERP systems.
There are also potential challenges and risks associated with a COTS solution including:

- Key business requirements may not be supported by available COTS solutions
- There is uncertainty about long-term vendor viability and/or their ability to effectively enhance and support the application for the next 5-10 years. It is important to have a long-term partner whose support you can rely on for many years to come
- The COTS technology is not consistent with your IT organization’s policies (e.g. it uses a proprietary database, is not web-based, etc.)
- High short-term costs, which could include license and database fees

In summary, asset management COTS solutions typically offer many advantages including lower overall costs, best of breed functionality and low risks, but if your organization has unique business requirements which cannot be adequately addressed by available COTS solutions, the next step would be to evaluate building a custom asset management system.

**Custom Built Solutions**

The major factor which significantly reduces the ROI of a custom solution (and in many cases, ultimately causes the endeavor to fail) is the lack of available personnel with proper skill sets to design, develop and deploy it. Not only do you need experienced software developers, you need knowledgeable asset managers who can clearly articulate the business requirements and collaboratively create a statement of work. Unless your organization has expertise in software development, there is an extremely high probability that you may not have the resources needed to be successful in building an asset management system from scratch. Another major consideration should be the risk factor. Should you allow personnel to gain the skills and experience necessary for this task through the development of mission-critical systems which are audited regularly and open the organization to potential non-compliance risks and penalties? Cost is yet another element to consider, weighing the initial minimal costs for custom application development against the higher initial costs associated with a COTS solution.

Many organizations choose a custom built solution, and there are some good reasons for doing so:

- **Your business is unique.** Vendors can’t address the asset management requirements of all organizations –based on the unique way your business operates, a custom solution is the best or only option.
• **Your asset management requirements are unique.** It is also possible that after surveying industry for asset management solutions, you have not found one which addresses at least 85% of your requirements.

• **You have documented potential cost savings, new revenue opportunities or a unique competitive advantage through creating your own asset management software.** Managing an organization’s assets is a mission-critical function and depending on your organization, you might be able to create a business case which documents cost savings associated with creating a custom system. This documentation should clearly illustrate the anticipated benefits, costs and potential risks as well as quantify available options with ROI.

• **Interface challenges.** Depending on the technology of your current system and acceptable COTS options, sharing information between systems could present significant challenges which warrant creating your own application.

In addition to the concerns around having the proper resources with the right skill sets to develop a custom asset management system, it is also important to recognize other potential challenges and risks including:

• **The “We’ve always done it this way” mindset.** From a business process perspective, some organizations that design their own systems are in effect operating in a vacuum. If you aren’t taking the time to research other best practices and innovations in asset management technology and operations, you’re putting yourself at an obvious competitive disadvantage. In many cases organizations convince themselves that putting a web-based front-end on an old existing mainframe or other dated system will address their needs simply because they want to avoid change and because “we’ve been managing assets this way for years.” The implementation of an asset management system can be an opportunity to improve all facets of asset management operations including policy, procedures, and systems, so you must survey technology providers and peer organizations and communicate your findings.

• **Most likely expensive to develop.** No check was written, so it didn’t cost anything, right? After all, the programmer’s time is already paid for. First, if your company’s management is actually using this type of thinking, you are (or will be) in a world of hurt. Second, development can be much more expensive than you might think. Don’t let the single large COTS package price tag scare you. The cost of your development team, the time taken from the user departments during all phases of development, testing and deployment, and the opportunity cost of the work not done on other projects is a quantifiable dollar amount that must not be ignored.

• **It may be expensive to maintain.** Maintaining an application on the current platform (which may mean dealing with a succession of platforms) can be an
expensive proposition. As new hardware and operating software continue to be released on an increasingly frequent schedule, the long term costs to upgrade any custom development should be forecast and considered in any evaluation.

- **Training current and future staff.** Now that you have developed a great custom solution, how will you train (or retrain) your staff? Comprehensive training curriculum materials are critical for the successful use of just about any system but are often overlooked as an important priority.

Hybrid ERP Solution

A final option is the Hybrid ERP solution where developers create custom code for an existing ERP system (i.e. SAP, Oracle Fixed Assets, PeopleSoft, Costpoint, etc.) to perform functions not present in the current application. Most of these applications are designed from a financial or production scheduling perspective and often don’t offer the detailed level of accountability, inventory capabilities, reporting and critical interfaces to third-party systems like the IUID Registry/WAWF, PCARSS, etc. which are required by many organizations.

Benefits of the Hybrid ERP solution can include:

- **Eliminate the need for another system.** In times when organizations are being asked to do more with less, there may be a cost benefit in leveraging existing systems versus bringing in another system specifically for asset management which would most likely necessitate software and database licenses as well as additional IT support.

- **No need for interfaces.** Since the required asset management functionality would be added to the existing ERP system, there would not be a need for interfaces between other system(s), cutting down on required development, testing, documentation and of course, costs.

- **High degree of customization could be supported.** This approach enables organizations to have a great deal of flexibility in extending custom code at their discretion. As is the case with developing a custom application, developers could tailor their asset management system closely to their current business processes (recognizing this has advantages and disadvantages).

- **Typically lower costs than custom solution but higher than COTS solution.** As previously discussed, developing a custom application can be an expensive proposition but depending on scope, adding code to an existing ERP system is typically less expensive than a custom system but higher than procuring and deploying a COTS solution.

It is also important to recognize the potential challenges, risks and costs of the Hybrid ERP solution which include:
• **Time and resources needed to create custom code.** Does your organization have the IT resources in conjunction with functional subject matter experts to write the specifications and code needed to accomplish your objectives?

• **Costs to develop, test, QA and document will be high.** As is the case with the Custom Built Solution, and again depending on scope, the development, testing and training costs could be high. Additionally, since this code will be dependent on the current ERP system, what happens when the organization needs to upgrade to a more current version — as is the case about every 2-3 years? Depending on how the code was structured, custom code may need to be entirely rewritten.

• **Might interfere with other ERP projects/priorities.** When asset management is embedded in an ERP system, it must compete with other functional areas for attention and resources which could include production, finance, procurement, HR and other significant areas of the organization. When the sandbox is bigger, it’s possible that the voice and priorities of asset management could more easily be overlooked or discounted.

**Demonstrate the Need for New Technology**

There’s no question that a new (or upgraded) asset management system which fully addresses all of your requirements is ideal, but before pursuing any formal analysis, you must first document a business need with an estimated Return on Investment (ROI). People can often be “wowed” by a demonstration, influenced by analysts’ comments or user feedback and immediately want to enjoy that same level of perceived success without performing the necessary research and analysis. To avoid getting caught up in the hype, you must outline your specific goals (i.e. reduce inventory loss, reduce risk of non-compliance, increase equipment availability, etc.) and **quantify** each benefit. The potential benefits should be compared to the estimated costs and if the payback is less than three years, you probably have a project worth pursuing and should move forward. If you need help in this area, I recommend “Writing an Asset Management System Business Case” published in the April/May 2010 edition of *The Property Professional* as it offers a framework for analyzing benefits and costs of implementing an asset management solution.

**Analysis of Software Alternatives: COTS/Custom/Hybrid ERP Analysis Matrix**

As outlined in “Writing an Asset Management System Business Case”, it is critical to first establish an Internal Project Team (IPT) where the business needs of all areas including property and material management, IT, finance, compliance, shipping/logistics, etc. are represented across all potential sites in scope for a specific project.
As part of the IPT’s evaluation, alternatives should be presented in a matrix with decision criteria to analyze the benefits, challenges, risks and costs of pursuing a COTS, Custom or Hybrid ERP solution. This matrix should include a cross-section of functional, technical and other relative data points. Though some questions may be subjective, each response should be supported with data. The IPT should agree on the questions as well as their corresponding value (weight) as the results should provide insights and quantitative data to support the recommendation of the team. A sample Analysis Matrix is below:

### Sample Analysis of Software Alternatives

<table>
<thead>
<tr>
<th>Decision Criteria</th>
<th>Weight</th>
<th>Score (1-5)</th>
<th>Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functionality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Desire a solution which incorporates “best practices” from peer organizations</td>
<td>8</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>2. Desire an industry “proven”, low risk solution</td>
<td>10</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>3. Desire vendor to provide functional and technical updates</td>
<td>7</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>4. Able to address functional requirements in available COTS solutions</td>
<td>12</td>
<td>4.5</td>
<td>5.4</td>
</tr>
<tr>
<td>5. Don’t have unique requirements or want to create a competitive advantage</td>
<td>12</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Need to implement a solution quickly (next 6-9 months)</td>
<td>9</td>
<td>4</td>
<td>3.6</td>
</tr>
<tr>
<td>7. Low tolerance for project failure</td>
<td>8</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>8. Desire to work with a stable vendor who has long-term viability</td>
<td>7</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>IT Culture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Wants to control system development, support and training</td>
<td>5</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>10. Adverse to bringing in another system – attempting to consolidate on existing systems</td>
<td>5</td>
<td>2.5</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Prefer lower overall costs – even though up-front costs may be higher</td>
<td>5</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>12. Lack the IT staff to develop, test, Q/A, deploy and maintain a custom system</td>
<td>6</td>
<td>4</td>
<td>2.4</td>
</tr>
<tr>
<td>13. Lack the resources needed to train current and future users</td>
<td>6</td>
<td>4</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>100%</strong></td>
<td><strong>40.25</strong></td>
<td></td>
</tr>
</tbody>
</table>
Scoring Legend:
5 = Very important/Strongly Agree
4 = Important/Agree
3 = Neutral
2 = Not Important/Disagree
1 = Least important/Strongly Disagree

Results Analysis:
41-50 = Scoring supports COTS solution best satisfies business requirements
31-40 = Scoring supports COTS or possibly Hybrid ERP solution best satisfies business requirements
21-30 = Scoring does not support any clear recommendation
11-20 = Scoring supports Custom or possibly Hybrid ERP solution best satisfies business requirements
0-10 = Scoring supports the development of a Custom solution best satisfies business requirements

Each member of the IPT could submit their own response or the IPT can work collectively as a team in order to agree on each value. Organizational structure and culture will largely determine which approach will be most successful. The results of this matrix should be factored in with other important decision criteria in making the final decision.

Just in case this article hasn’t presented enough factors to consider when deciding what software system to choose, you also need to make sure you don’t let the process of analyzing those factors result in project failure. When there are dozens of considerations and decisions to be made, organizations run the risk of "paralysis by analysis." It is crucial to keep the big picture in mind and not get buried in the micro-level review.

Summary

One size rarely fits all when it comes to implementing an asset management solution, but the first step in your decision is to clearly analyze your needs and project goals. Then you must consider all benefits, challenges, risks, and costs in conjunction with internal organizational characteristics such as culture and long-term strategic goals. As such, making “build vs. buy” decisions can be a challenge. Organizations often do not have enough information, and variables can change during the decision-making process. However, remember that the aim should be to make a "good decision," not necessarily the "best decision." The business is a driver for making this decision and taking too much or too little time to do so can have poor long-term effects for the business. Finally, one should always be willing to modify a decision based on new information and changes in the environment.
Each organization is unique and depending on its needs and project scope, any of the three alternatives discussed could be very viable options. In order to provide insight and supporting documentation, you should tailor the analysis matrix to your issues, goals, and preferences, but hopefully this initial framework provides a platform that could assist with that analysis.

Works Cited


Author Bio

Brian Thompson is Vice President of Solutions, Strategic Markets at Sunflower Systems where his responsibilities include the sales and marketing of Sunflower Systems solutions to key strategic accounts, exploring new markets and enhancing general sales operations. Thompson also currently serves as NPMA VP Marketing Communications where he executed on his concept for the highly successful NPMA Newsflash weekly newsletter and is also one of the leaders of the Seminar Committee whose efforts have improved the educational content and learning experience at NPMA Seminars and Conference events in 2011. He is a frequent contributing author to The Property Professional publication where in 2010 he earned Article of the Year for, “Writing an Asset Management System Business Case” and in 2007 he also earned an Award of Merit for Literary Excellence. Thompson earned a Master's in Business Administration and a Bachelor of Science in Management from Pepperdine University and is a former faculty member of the UC Berkeley Haas School of Business.
Being Bob McFarland
or
How to Apply Someone Else’s Work

Larry Miramontes, CPPM
Aerojet

Part 1

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Project Initiation

In September of 2009 I was asked to join a lean\(^1\) project. The project centered on the use and control of fixed assets. The overall goal of the project was to reduce the number of fixed assets reflected in the general ledger by identifying and eliminating excess assets. I was designated as the project “lead” and subject matter expert. What I realized in a very short time was that I wasn’t the expert that everyone thought I was. In fact, I was missing a large pool of knowledge that I had relied on other people to provide.

What does this have to do with the title of the article? Well, it just so happened that I knew someone who had recently gone through a very similar project. I had read his articles in the NPMA Magazine and attended his seminars at the NES. His name is Bob McFarland and his seminar was titled: Property Management and Metrics that Add Value (McFarland, 2008 - 2009). Although I couldn’t remember all the details of his project, (None of us ever do.) I did have the issues of the magazine containing his articles. So I began to read the information provided to get as much understanding as possible from the written word. Then I read it again and again. I learned several things in the process. First, the article was about the metrics generated during the course of the project and how they were used to validate and verify progress. I also learned that development of the metrics was based upon the project goals that Bob and his team were attempting to accomplish. The real question was: How do I take someone else’s work and make it useful in my own environment?

I began by determining if our projects had enough in common to warrant “stealing” his ideas. Both of our goals dealt with reduction in assets. Bob’s concentrated on metrology equipment while mine encompassed all fixed assets. One of Bob’s goals was to reduce the number of procedures required to support the calibration of numerous

\(^1\) Increasing efficiency by optimizing workflow
models of the same type of equipment. My corresponding goal was to reduce maintenance costs by eliminating unnecessary maintenance activities. But the real “kicker” was the list of key elements Bob had in his presentation:

- Alignment with Organizational Mission
- Quality of Product
- Timely Delivery
- Cost Reduction/Avoidance
- Cycle Time Reduction
- Backlog Reduction

Every key element aligned with my project.

After meeting with the Lean Team and presenting a set of proposed metrics, we began to study the data sources for each metric. There were some metrics that were not as readily available as they were in Bob’s environment. In fact, my finance representative and I called Bob and asked questions about his source of information and where he thought we might search for the data. He was very gracious and delighted that we would even consider “stealing” his processes. The detail he provided allowed me to research various data sources within the company to determine the viability of producing specific metrics. The more I dug, the more I learned about simplifying the metrics and charts so that they were not too busy. The goal was to present information that maintained the interest of the executive staff and provided sufficient information for the team to utilize in real time. All of this was accomplished while learning a new approach to “lean” and working the first transactional lean project for the company. The “lean” project ended after three months and resulted in the development of a new disposition process for fixed assets. The creation of the Equipment Management System Team (EMS) was one of the outcomes of the lean project. Although we had established a fairly good base and thought we had a handle on the new process, the real work did not begin until we returned from the holiday break in January.

The Real Work Begins

In simplistic terms, our EMS Team goal was a 20% reduction in fixed assets over a five year period. Our metric goals were based on the total number of fixed assets in the general ledger multiplied by 20% and divided by five. For example:

10,000 GL L/I’s * .20 = 2,000 / 5 = 400 line items per year reduction

Our team was assigned a “war room” which we decorated with the boards and charts that we developed during the lean project. Our process was designed to be simple. Our motto was “One call does it all!” The concept was to provide consolidated disposition services based on a trigger event in the form of an email, phone call, FAX or
verbal notification stating that an asset was excess. Other potential trigger events included facility realignment, demolition projects and program closures. Once a trigger event occurred, a team member would evaluate the asset, determine the actions required to remove it, establish the disposition path, and facilitate the removal of the asset. Our tracking method consisted of status boards that represented the various phases of the disposition process. Each asset was considered a “project” and assigned a project number which was recorded on a router sheet. The Router sheets were then moved through the various status boards to provide a visual indication of where work was being performed. Each status board could handle twenty router sheets and there were five status boards. The process we designed was simple and easy to maintain. Or so we thought. Turning reality into measurable accomplishments was a lot more difficult than we initially anticipated.

I kept going back to Mr. McFarland’s presentation to study the metrics. One metric in particular was of interest to our executive staff… the \textit{Cost of Ownership}, and Bob did an excellent job of describing the elements that went into the cost of ownership in his presentation. However, determining where we could obtain the information turned out to be a whole new ball game. I’ll briefly explain our problem.

The simple formula is:

\[ \text{Acquisition Cost} + \text{Utilization Cost} +/− \text{Disposition Cost} = \text{Cost of Ownership} \]

In truth, the individual metrics that each of the three basic elements of the formula contain is extensive. There were many data sources to take into consideration and organizations involved with the collection of information. The more we studied the formula, the more we realized that our company’s systems were not designed to provide such detailed information. We had systems that didn’t communicate with each other, incomplete records, lack of historical data, insufficient detail, and a slew of other hurdles we couldn’t jump. The bottom line was that we couldn’t recreate what Bob had accomplished because we didn’t have the same capability. Meanwhile, we continued to rid the company of excess assets. At this point I asked myself: What would Bob do? My best guess was that Bob would implement the data collection processes he needed and continue with the project. Unfortunately, I didn’t have a sufficient level of authority to make that happen. The next best thing would be to use the information we currently had available to demonstrate to the Executive Staff that we were on target and making progress against our goals. We could also demonstrate various cost savings as a result of the asset reduction. The metrics we eventually developed included: Percent of Line Item Reduction, Reduction in Net Book Value, Reduction in Property Tax, Distribution of Disposition Methods, Records Closure Distribution and various Cycle Times.

\textbf{Change of Project Scope}
In March of 2010 our company had a change at the President level. The new company president had a different financial goal than his predecessor. Our team’s goal changed from its original 20% reduction in 5 years to a 50% reduction in 3 years. Revisiting the formula shown earlier, our goal changed to:

\[ 10,000 \text{ GL L/l's} \times .5 = 5,000 / 3 = 1,167 \text{ line items per year reduction} \]

This represented tripling our original goal. To be blunt, our process and tools were not designed to handle the volume. There was some major reinvention that needed to be done in order to embark upon our new journey. At this point the onus changed from getting rid of fixed assets to cleaning up the facility. Our leadership determined that my skills as a Property Manager were insufficient to accommodate the massive changes that needed to be made, so I was replaced as Team Lead by an efficiency expert. It was a wise move on the part of Leadership! (Just because you know a lot of stuff doesn’t necessarily mean you know the right stuff!) I remained on the team as the full time property specialist. During the next 30 days our team morphed into something entirely different. We ended up consisting of representatives from Environmental Health and Safety, Quality Assurance (Lab), Site Services, Finance, Property Management, Test Operations and Production. We also had a crew to perform building inventories as well as disconnect, clean, move, scrap, waste and stage assets. On the administrative side, we developed a review process to accommodate assets on record that no longer existed on site. The administrative removal of these assets from the general ledger had different set of rules to ensure compliance with regulation not to mention an altered data set to collect.

We converted from router cards to tracking progress in Excel. We relegated the initial analysis of physical assets to the user community. We developed new documentation methods for initiating and tracking the removal of assets. In other words, our Efficiency Expert got us back on track in a very short period of time with very few ripples. Personally, I had no problem relinquishing my leadership role and becoming an individual contributor.

Comparing Key Elements

Now, let’s get back to “being Bob” and the key elements of his presentation.

1. **Alignment with the Organizational Mission** – the organizational mission was to reduce the content of the general ledger to make the company more competitive. Our team was in place and dedicated to that very purpose. Metrics showed the impact of removing fixed assets on the General Ledger. The metrics that applied to this element included:
   a. Acquisition Cost Reduction in both dollars and percentage of GL value.
   b. Net Book Value Reduction in both dollars and percentage of GL value.
c. GL Line Item Reduction in quantity and percentage.

2. **Quality of Product** – Our product was the removal of excess fixed assets from the facility. Our quality improved because we expanded our role to include all excess machinery and equipment regardless of whether it was a fixed asset or not. The justification was that the items needed to follow the same disposition processes and decision tree due to the nature of their application. Metrics indicated the total number of assets removed and the number of records closed. Metrics supporting this element included:
   a. Monthly Disposition Quantities
   b. Disposition Distribution Method (Sold, Scrapped, E-Waste, Waste Stream and Admin)
   c. Record Closure Distribution (Property, Financial and Maintenance)

3. **Timely Delivery** – In order to maintain the proper pace for making our final goal, our team had to relieve the general ledger of 40 line items per week. While this doesn't sound like much, if you take into consideration size, location, contamination, remediation, rigging, sale, scrapping, waste stream coordination and numerous other factors, it really is quite a bit. Some weeks we made or exceeded our goal, other weeks we did not. The leadership only questioned when we didn’t. Metrics showed our time-phased progress against the goal established by the Executive Staff. The metrics were:
   a. Monthly Progress Against Goal
   b. Total Reduction in Assets

4. **Cost Reduction/Avoidance** – Cost reductions and cost avoidance fell into two categories – reducing the content of the general ledger and streamlining the disposition decisions and corresponding processes. Cost avoidance metrics were associated with equipment footprints and the corresponding storage savings. Cost avoidance pertaining to disposition decisions were individually calculated, but not recorded. Metrics associated with this element included:
   a. Reduction in Property Tax
   b. Reduction in Maintenance Cost (active scheduled maintenance only)
   c. Reduction in Storage Cost

5. **Cycle Time Reduction** – Cycle time for the disposition of excess assets was not baselined prior to the initiation of the project. During the course of the project we measured the time from the initial declaration of excess to the final closure of records. We improved cycle times dramatically during the course of the project. Cycle time metrics included:
   a. Records Posting Cycle Time (Property, Financial and Maintenance)
   b. Disposition Cycle Time

6. **Backlog Reduction** – Our backlog for removing unused assets from the facility dated back to the 1960’s. Many of the assets removed from the facility during
the course of the project had no book value, were in a state of disrepair, abandoned or stored and taxed. There were no metrics associated with this particular element, although we did do some analysis to determine the average age of our assets.

Comparing Plans

One of the section’s in Bob’s presentation dealt with establishing a plan. Since my project began as a Lean Project, I had assumed that our team always had a plan. In reality, our plan lacked several elements that became apparent well into the effort. Let’s revisit Bob’s criteria and see how that happened.

1. **Identify Critical Work Process and Customer Requirements** – Our critical processes were all associated with not violating any environmental health and safety requirements. They included testing for PCB’s and other contaminates, performing job safety reviews, establishing the proper waste streams and coordinating with Site Services for contractor support. The customer requirements were relatively simple to determine in the beginning as reference previously. But as we expanded our customer base, the requirements altered significantly. We were impacted by maintenance schedules, production schedules, funding issues, availability of brokers, lab capacity, waste operations restrictions, new direction and a plethora of other requisites. In a nutshell, each customer requirement was prioritized based on resources and schedule rather than a preset plan.

2. **Identify Critical Results Desired and Align Them to Customer Requirements** – The critical results required were tied to schedules associated with clearing an area for remodeling or demolition. We “attacked” the manufacturing areas first, then the test areas of the facility. Areas that were abandoned or inactive were addressed as time permitted. Meetings were held weekly to discuss progress and the next priority for removal of assets.

3. **Develop Measurements for the Critical Work Processes or Critical Result** – We failed miserably in this part of the plan. We never aligned our work to the other activities happening on the facility because there was no clear communication between organizations. For example, if a specific manufacturing area had to cleared in order to support a modification to the facility, the EMS Team was not informed until the assets were in the way. We got better at coordinating events as time went on, but initially we were much more reactive than proactive.

4. **Establish Performance Goals, Standards, or Benchmarks** – We did very well in the category. Our goals and standards were established early in the process.
Although the goals changed, our standards did not. New standards may be established after some period of time, but overall we are meeting our objectives.

As you can see, being Bob McFarland isn’t easy. The amount of decisions that need to be made and the techniques used to accomplish the tasks are only part of planning a massive project. Getting the right team together is extremely important. Choose wisely and assign people who have a vested interest in getting the job done. Communicate, communicate and communicate some more. Our team met twice a week to update status, discuss issues, provide resolutions, and listen. Listening was equally important to talking.

Looking at the Principles of Metrics

Early in Bob’s presentation he discussed the principals of metrics. I revisited that portion as well to see how I did.

1. **Metrics are Important to Management** – Not all metrics were important to Management. Those that reflected critical aspects of Management’s plan were recorded and reviewed weekly. Metrics that applied to the General Ledger were accumulated on a monthly basis. Many of the metrics were important to the Team and specific team members. We did not collect metrics we didn’t use.

2. **Metrics Provide an Easy Way to Market Your Services** – Bob was absolutely correct in this aspect. Most employees did not believe that the EMS Team could rid the facility of heritage assets. The cost of removal and subsequent facility modifications were prohibitive and therefore disposition was not achievable. Our metrics made true believers out of many doubters as the number of line items disposed of increased with each passing week. The clearing of floor space and the subsequent storage cost savings also demonstrated that the team’s services were worthwhile.

3. **Metrics Can Clearly Demonstrate Value** – We had several people working on the team that would have been laid off if they didn’t have other work to perform. Our metrics showed that the retention of these individuals was critical to the company’s overall goals. The cumulative impact of what we were accomplishing showed that without a dedicated team of individuals we could not make progress and ultimately affect shareholder value.

4. **Metrics Can Be Derived from What You are Already Doing** – Most of the metrics we created were new and based upon the data collected specifically through our EMS Team processes. However, we did impact metrics presented by Finance and Property Management in the area of cost, taxes, inventory accuracy, and depreciation expense.

5. **Metrics are Easy to Understand** – Metrics with too much information look impressive, but sometimes confuse the reader. Although we could combine
charts to limit the number of charts we were producing, in many cases we decided that the simple charts did a better job of focusing on the message. There was never any doubt about what the chart was communicating.

What I discovered is that being Bob McFarland is hard work. Don’t attempt it unless you are prepared to go the extra mile and achieve not just your goal, but the goals of those around you. In relation to those goals, the use of metrics to establish the value of your project is essential. It was also important to remember that the effects of your project are as important to others as they are to you. Our team learned that complete understanding how to get where you’re going before you start on your journey isn’t always possible. However, with the help of a good guidance system and hard work you can reach journey’s end with a minimum of wrong turns.

This concludes Part 1 of Being Bob McFarland. Part 2 discusses the trials and tribulations of dispositioning multitudes of company property while coordinating, tracking and reporting the results. We’ll cover how to define excess, analyzing assets for disposal, various threshold criteria to consider when determining the best bang for the buck, selecting the best disposition method, coordinating events and means of communication.
The Project

As discussed in Part 1, our Lean Project was to reduce the value of the General Ledger by identifying, dispositioning and documenting company-owned excess property. This project was touted as the company’s first transactional lean project. To say the least, it was a misnomer. I won’t delve into the lean training and how a transactional project differs from a manufacturing project, but the difference was significant enough to cause some confusion at the outset.

Our initial lean team consisted of two members of the full-time lean team, me, and several ad-hoc members. The full-time lean team members were there to teach us and guide us towards our goal. Our ad-hoc members consisted of representatives from Property Management, Finance, Manufacturing Operations, Test Operations, Information Systems, and Site Services. We used lean tools to collect data, develop diagrams, create charts and provide presentations. However, in the long term it was a single statement made during one of our brainstorming sessions that provided the baseline for what our team would end up accomplishing. It went something like this: “If I have excess property, why can’t I just call someone and have them take care of it?” We all looked at each other and ended up agreeing that there was really no reason they couldn’t.

The statement was actually born out of frustration. In our work environment each organization was responsible for getting rid of excess property accountable to their department. If an individual had never performed the task before, there was a complex learning curve they had to go through in order to understand all the regulatory criteria that had to be met. The criteria included knowing what the property was, how it was used, what it was exposed to, its condition, location, ownership, size, weight, impact on the surroundings, and a slew of other special considerations. You also needed to know what to do if it was contaminated with PCB’s, MDA, propellants or any other chemical. You needed to understand how to coordinate with outside contractors if necessary, arrange transportation, properly complete the required documentation and coordinate records updates. As personnel turned-over, the lessons had to be relearned. Since each organization held the responsibility, many people went through the same ordeal without any effort to coordinate the training or consolidate the actions.

Another issue we dealt with was getting the employees to actually declare operational equipment as excess. The problem was that the definition of excess when dealing with company-owned assets is not the same as the definition applied to Government
Property. While the basic principles are the same, the reality is quite different. Most people do not want to throw good stuff out. However, if you’re not using it and you have no plan to use it in the future, keeping it is costly. Explaining to employees who have no background in asset management the value of declaring excess is difficult at best. Getting them to “pull the trigger” is even harder. The problem is a lack of leverage. Unless you have the support of leadership, getting rid of company-owned property is like pushing rope. If an asset is inoperable, broken or in the way, you will achieve some level of success. However, if the asset is operational and not in the way, it is more likely to be ignored than addressed. So, we defined “excess” based on utilization data rather than on programmatic support and provided information on how to establish whether something should, could or would be used. We also performed cost/benefit analysis as part of our original Lean Project to demonstrate the value of removing assets that were not used or only used occasionally. We also covered the redeployment of equipment to replace older assets.

During our brainstorming sessions we discussed the concept of assembling a group of experts that would work as a team and provide disposition support as soon as an item was declared as excess. Then we worked to make it happen. As a result, the Equipment Management System Team was created, provided a charter and given a place to set up camp.

The new team had a slightly different makeup than the Lean Team. We added representatives from Environmental Health and Safety and the Chemical Laboratory. We lost our representative from Manufacturing Operations and changed the representative from Test Operations. Everyone (except me) had their normal jobs to perform. I was dedicated to the EMS Team as Lead. Each member of the team was to become knowledgeable in the disposal of assets. We would learn the processes together so any one of us could assist our customers. We set up a website, phone, fax and email to maximize communication and then announced our existence at staff meetings. Of course, nothing went quite like we planned.

All the little things take time. Setting up communications, establishing work stations for team members and acquiring supplies to support the team are examples. We also found out that each of us becoming an expert was not the right path to take. There were just too many variables associated with the condition of assets that required specialized knowledge. In addition, our team members didn’t have enough time dedicated to allow them the opportunity to learn what they needed to know. We eventually decided to have a team that worked like a committee. Each of us had a role to play in the disposition process. It was designed like the company’s Capital Committee, only we did our jobs at the end of the asset’s life cycle. This arrangement allowed us to properly prioritize activities, decide where to spend time and money, assign tasks by specialty and track actions through a central point. The basic
contributors to the team are shown in Figure 1. Environmental Health and Safety was responsible for analyzing PCB reports, coordinating removal of contaminated assets and advising the team on EH&S related activities. Operations lead the team and prioritized work, resolved issues, communicated with leadership and provided direction to the Site Services supervisor. Administration maintained the control room, researched equipment histories, provided record data, updated spreadsheets, generated metrics and tracked projects. Property Management handled any Government assets, assisted with data collection and updated records. The Chemical Laboratory was responsible for determining sample sizes, sampling and testing for PCBs and providing reports. Site Services provided the manpower for collecting data, cleaning assets, removal of assets and posting records and Finance provided record posting and reports. We met twice weekly to ensure we accomplished all the scheduled tasks.

As discussed in Part 1, our original goal was to eliminate 20% of the fixed assets from the general ledger over a 5 year period. Our process boards were set up to handle a rate of 400 line items per year. We found that it didn’t take long to saturate the In-Process board due to the length of time it takes to prepare an asset for disposition. Our biggest hang up was getting the lab tests done for PCB analysis. Due to the limited capability of our lab and the high level of work they were required to accomplish, the
initial turn-around time was 4-6 months. In the meantime, we dispositioned as much as possible through e-waste and scrap.

In April/May of 2010 I took an extended vacation. When I returned in the middle of May, I found that very little had been accomplished. Although the team members were working some issues, they were not the priority. Our available resources at the time were hit-and-miss and our activities were considered as fill-in work. At the same time, word came down that our task was being escalated and that the leadership wanted a 50% reduction over the next two years. The VP of Operations came to visit and asked me to walk him through our process. He determined that we were in need of an efficiency expert and subsequently assigned a new team lead.

The new leader took over almost apologetically. His expertise was in lean disciplines and it only took a short while until he concluded that our team did not have adequate support to accomplish the task at hand. He also determined that the tools we had established during the lean project were insufficient to handle the volume of work we now needed to complete. He agreed that the processes we had developed were sound and that the metrics we were collecting were of value, but the means of data collection and tracking were still too labor intensive and unmanageable in the long term. Under his leadership our team began to morph into something more streamlined and efficient. The change was far from easy. However, as a direct report to the VP of Operations, our new leader had a better opportunity to implement changes and gain resources for the EMS Team had under my leadership.

Changing the Team’s Way of Operating

One of the first things our new leader did was convince the VP that we needed dedicated support from our Site Services organization. The basic argument stated that even though an item could be declared as excess by the end users, lack of the proper disciplines to remove the asset from the workplace made the declaration moot. He pointed out that our goal was to reduce the value of fixed assets in the general ledger and to do so, the excess assets had to be removed from the facility or they were still a liability. The VP agreed and we were provided some dedicated individuals to work with the EMS Team. The personnel included an electrician, lubricator, machine tool repairman and a supervisor.

Our leader also changed the way the administrative support activities were performed. Rather than using routers and router boards, all the data was converted to a Excel spreadsheet. The information collected went from a relatively simple set of data to a very complex combination of criteria and dates. The performance of equipment evaluations was reassigned to the end users. Team meetings were rescheduled to
occur twice a week and the control room was reorganized to adopt a pull system for the team members and support functions. The simplified process flow is shown in Figure 2.

Another change to the way the team operated involved calculating value based on the cost of dismantlement, sampling, testing, cleaning and transportation versus disposition through the waste stream. In fact, waste stream expenses increased significantly during the first year of the project and influenced the disposition path taken by many assets. Our leader also changed the way we filed documentation and tracked it throughout the process.

**Coordinating Events**

Some tasks were much more difficult than others. Processing assets through e-waste or placing them in a scrap bin is the easy part. Items that are contaminated or very large (or both) are the hard part. To establish whether something could potentially be contaminated required several pieces of information. These included date of manufacture, how used, where used and maintenance history. It sounds simple, but when the asset is 50 years old, not so much! There were also many types of contamination with which the team had to deal, each with its own reconciliation method.

![Figure 2 – EMS Simplified Process Flow](image)

Any item with asbestos contamination had to be remediated prior to any other work being performed. PCB contamination required sampling and testing, then cleaning if
needed, followed by more sampling and testing. Other contaminates required flashing, bake-out, power washing or immediate submission to the appropriate waste stream. Coordinating events with the laboratory (sampling and testing), operations (flashing, bake-out and power wash) or EH&S and Waste Management (waste stream) was challenging.

Size does matter. Some of the equipment items we removed from the manufacturing facilities were extremely large and heavy. Specialized equipment was needed to physically move the assets to a point where they could be loaded onto trucks for transport to their disposition destination. These actions required outsourcing and coordination with Site Services, Procurement, brokers and contractors. In some cases we horse traded to obtain the services for removal. In other cases we had to pay the piper.

Keeping track of cost savings to offset the disposition costs was one of the keys to the continued health of the EMS Team. Cost avoidance was also tracked, but not used as justification to continue the disposal processes.

More Changes in Scope

Once again the team was confronted with new challenges. The company decided that they were going to proceed with the demolition of condemned and inactive facilities to prepare for the reduction and beautification of the facility. Not a few buildings, but dozens of buildings. This action required the team to look at assets based on locations associated with the condemned buildings. Since the same disposition criteria applied to the severable assets located in the buildings to be demolished, the team had to remove and dispose of them prior to the demolition taking place. At the very least, we had to make sure that any items left for demolition were not in violation of Federal and State environmental requirements. So the team ended up stripping the buildings of assets just one step ahead of the demolition crew. All items removed were documented and tracked through the EMS process. Even items without any corresponding records were added to the spreadsheet and tracked. This allowed the team to ensure that if questions were asked regarding the items removed, they could be readily answered.

Another change in scope was created by the finance organization. They sent lists of capital assets to each manager and requested that they review the lists for assets no longer used or available. Since many of these assets were not properly documented over the years, it became necessary to establish an administrative means of removing them from the record. Performing a government-style loss, damage or destruction report was not feasible based upon the number of assets declared “undiscoverable” in the lists returned by management. As a result, reconciliation codes were developed that reflected the steps taken to establish that an item was no longer present on the
facility. The reconciliation efforts included researching records, reviewing usage, looking at building histories and physical verifications. Each line item was individually documented and the appropriate codes assigned prior to removal from the various records. In some cases the records were updated to reflect current status based on information contained in supplementary records discovered during the research. 

The team also had to contend with equipment relocations due to consolidation of facilities. Although this was not part of our original charter, we were in the best position to ensure that each record keeping system contained the same information.

**The Team Just Keeps on Rolling**

As of the writing of this paper, the EMS Team continues to process excess assets and asset lists. Our demolition schedule spans a six year period and includes some very large facilities. The mission has expanded to include all machinery and equipment items whether they are capital assets or not. It is anticipated the team will expand into the special tooling environment as well. The EMS Team membership has remained stable and we continue to perform the tasks efficiently.

**Conclusion**

Regardless of how many years you've been practicing asset management, there will always be something lacking in your knowledge base. In my case, it was the detail involved with the dispositioning of excess company items. Using Bob McFarland’s article as guidance, I was able to properly educate myself in the relationships between management’s desires and the task. The metrics created added structure to the data collection process and the subsequent reporting of progress. This communication tool became the life blood of our team’s existence as we continually proved our worth.

There were many lessons learned during the course of the EMS Project. First and foremost was that a project started as a “lean” endeavor doesn’t necessarily turn out that way. Our original motto of “One Call Does It All” turned out not to be practical in the long run. To handle the increased level of effort required by our change in scope we had to rely upon the end users to provide more information than we had initially anticipated. The negative result was two-fold. It slowed down receipt of the trigger event and it created rework in many cases. Usually the rework was due to insufficient or conflicting information. The positive result was that the team was able to handle a greater volume of assets.

Another lesson was that the more data you collect, the more you can do with metrics. Understanding the what, where, when and how of asset disposal allowed us to focus on various cost and time factors associated with each disposition path. Our ability to answer questions like: “How long does it take?” “What will it cost?” “How much will we
save?” and “Where are we in the process?” became extremely important as time went on. We asked ourselves “what-if” questions on a regular basis which often resulted in a new value-added metric.

In summary, it’s not important to reinvent the wheel. If you can “steal” someone else’s idea and make it work for you, you should do it. Believe it or not, the Asset Management Community is relatively small and a rather tight-knit group. Our ability to share our ideas is one of our strengths and it should be taken advantage of on a regular basis. I’d personally like to thank Bob for his guidance and the use of his material. It helped more than he knows. I have learned a lot over the years from the “Bob McFarland’s” of our profession and appreciate every piece of knowledge I have collected. I hope that it’s the same for all of you.
Legal Implications Associated With Providing Government Personal Property for Contractor Use

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Abstract

This paper investigates the legal implications associated with the provision of United States (U.S.) Government's tangible, personal, property to contractors doing business with the Government. The provision of this property impacts virtually every portion of the contracts under which it has been provided. Contract performance can be facilitated or thwarted based on the condition, type, and quantities of property provided. Competition between contractors can be effected when one contractor is provided property and competitors have invested in property of their own. The paper addresses the many topics associated with contractor use of government property including competition; management control and accountability; risk, both to the government and to the contractor; title; and taxation. The paper will explore the background legislation, regulation, and various decisions of case law to illustrate these topics.

Introduction

This paper investigates the legal implications associated with the provision of U.S. government property to contractors doing business with the government. The provision of property impacts virtually every portion of the contracts under which it has been provided. For several administrations, there has been greater emphasis placed on the contracting of functions performed by and for government. The value and quantity of property provided to contractors have increased in parallel with the increase in contracting activity. For example, the U.S. Government Accountability Office (GAO), then the General Accounting Office, criticized NASA for providing $14.3 billion of agency owned personal property to contractors in 1993 (U.S. General Accounting Office, 1993). In 2009, NASA reported 39.1 billion in contractor held property. Contractors hold almost ten times the value of property held by the agency itself (Kinney, 2009). While part of this difference is based on accounting changes and inflation, the growth is significant.

The provision of property can effect competition between contractors. Lacking appropriate evaluative measures, a contractor who is provided production property, may gain a competitive advantage over others who have not, even though the others may be better prepared, having taken significant investment risk to acquire property of their own. Provision of property may have a positive or negative effect on contract cost. While the government may be able, through its large buying power to acquire property at lower cost than a contractor, there are increased costs associated with administration
of the property. The government’s risk increases and, for the most part, the contractor’s risk decreases as property is provided to contractors. The government assumes part of the risk of performance, because contract performance can be facilitated or thwarted based on the timeliness, condition, type and quantities of property provided. In many contracts, the government also assumes the risk of damage to, misuse of, loss of, and destruction of, property. The government and the contractor both incur cost related to the administration of this property and the mitigation of the loss risk.

The legal title to contractor acquired property, which varies based on contract type and financing provisions, has been discussed in many cases, principally in those related to use and sales taxes. The doctrine of supremacy plays a part in the title and taxation argument. Court cases have varied about what may or may not be taxed as well as what is or is not government property. Further, the outcome of some decisions may conflict with the law related to public property disposition authority and possibly the criminal code.

There are a number of laws related to the provision of property ranging from procurement law, through those governing management, control, and disposition for government property, to those prescribing requirements for accounting and reporting. Similarly, federal regulation exists in acquisition, property management, financial record-keeping, and reporting. Agency procurement regulations further refine the requirements. There is also a rich record of case law related to the topic. The paper will explore the background legislation, federal level regulation, and case law to illustrate these topics and will discuss the implication of decisions to provide property. While issues associated with the provision of intellectual and real property also have significant legal implications, this scope of this paper is limited, as far as possible, to the provision of personal property.

Method

This paper is based on a literature review of public law, regulation, and case law. The principle sources of information are federal government activities. As such, they are considered to be authoritative and current. Citations and summaries of federal laws were derived from information from the Government Printing Office website. Federal acquisition regulation information was obtained from the U.S. Government’s Integrated Acquisition Environment website. Information on agency regulations was obtained from agency websites. A significant number of cases were reviewed. Case studies were derived from decisions of the Armed Services Board of Contract Appeals. Appeals of the boards were obtained from cases before the U.S. Court of Federal Claims. Legal journal and professional journal articles are used to discuss the information found in results.
Results

Competition

Law

The Competition in Contracting Act, 41 U.S.C. 253, requires federal agencies to utilize competitive procedures in the award of contracts exceeding the simplified acquisition threshold. While there are several exceptions to the requirement, for example, when the products or services specifically required are not available from more than a single source, the services of an expert are needed in court, or when it is in the public's interest in terms of national security to maintain a production capacity, the law requires that contracts be competitively awarded (U.S. Government Printing Office, 2007a).

Regulation

Federal Acquisition Regulation (FAR) Part Six implements the Competition in Contracting Act. It sets forth requirements for the use of full and open competitive procedures; limits the situations where procedures other than competitive procedures may be used; and describes how socioeconomic goals may continue to be met by limiting competition in situations where small and small disadvantaged businesses are concerned (U.S. Government, 2009a). Agency regulations further refine the FAR. The Department of Defense does so through the Defense Federal Acquisition Regulation Supplement (DFARS) Subpart 206 (U.S. Department of Defense, 2009). NASA provides guidance through the NASA FAR Supplement (NFS) Part 1806. However, the language of the law and the competition chapters of the regulation do not specifically address the provision of property to contractors. This is accomplished in Far Part 45. In order to assure that the provision of government property does not skew the playing field in favor of contractors who intend to rely on government provision of property to the possible detriment of those contractors who may have already invested in property of their own, FAR Part 45.103(a)(2) requires agencies to eliminate, as much as possible, any advantage a contractor may gain over their competitors through the use of government property. A traditional method for contracting officers to level the playing field involved charging a rental equivalent for the property or adding a rental equivalent to a contractor's proposed prices.

Case Law

This policy and practice was tested in Alliant Techsystems, Inc. v. U.S. Department of the Navy (1993). In the case, Alliant Techsystems filed with the U.S. District Court for the Eastern District of Virginia, Alexandria Division, seeking restraining order and a preliminary injunction to stop the award of a contract to a competitor. At issue was the method for evaluation of contractor bids, related to the provision of government property. Alliant Techsystems had, under a prior cost contract, produced tooling and special test equipment used in the production of torpedoes. Under the
Government Property Clause, for cost type contracts (FAR 52.245-5), the government took title to all property properly chargeable to the contract. This equipment was described as Government Production and Research property (GPRP). The contractor disputed the Navy’s ownership. In support of a following, competitively awarded, fixed-price, contract with Westinghouse Electric Corporation (WEC), the Navy procured training, technology, and technical drawings of the GPRP from Alliant and provided them to WEC. WEC produced additional property, termed Production Special Tooling and Production Special Test Equipment (PST/PSTE) under the contract. Under normal fixed price contracts, the government does not assert title to property produced by the contractor in performance of the contract unless it is deliverable. As a result, the PST/PSTE property produced by WEC was titled to WEC.

Alliant and WEC were awarded a second phase, low, initial, production contracts for the torpedo. Subsequently, the Navy held a competition to award a contract for the production of 265 of the torpedoes. The evaluation criteria for the award included price, adjusted downward by an amortization factor, for contractor owned equipment, and an upward by a rental factor, for GPRP. In the Request for Proposals for a successor contract, Alliant requested removal of the GPRP evaluation factor. They contended that it unfairly penalized them as both contractors’ equipment had, ultimately, been paid for by the government and their use of the furnished equipment placed them at a competitive disadvantage. The Navy did not agree and retained the evaluation criteria. The Navy asked contractors to propose to the RFP without exception and Alliant chose, at that time, not to challenge the Navy’s action through a protest to the, then, General Accounting Office. The Navy awarded to WEC, based on the lowest price after application of the evaluation criteria. Alliant challenged that their price would have been lower without the GPRP evaluation criteria (Alliant Techsystems).

The court found that the contracting officer’s discretion was correct in both factual and legal determinations. First, the court agreed that the contracting officers evaluation was correct, and was not arbitrary, capricious or an abuse of discretion. Second, in the legal determination involved the contracting officers assertion that competitive advantage would be accrued by a contractor provided government property. The court found that, because the government would be responsible for repair and replacement beyond normal wear and tear, the contractor receiving the property would acquire a competitive advantage. The court further found that, because Alliant chose not to challenge the Navy’s award process, they forfeited their ability to claim under estoppels and waiver (Alliant Techsystems).

Management Control, Accountability, and Liability

Law

Administration, Control and Accountability for federal government property are based on several laws evolving from Article 4, Section 3, of the U.S. Constitution. It states, in part, "The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the US."
Congress restricts the ability of individuals to use the public's property for anything other than a public purpose in the criminal code. 18 U.S.C. 641 makes it a crime to steal or convert to private use or sell without authorization, any public property, anything of value to the U.S. Government or anything contracted for by the government (Crimes and Criminal Procedures, 2007). Congress delegated this authority to the executive branch through portion of 40 U.S.C., commonly known as the Federal Property and Administrative Services Act of 1949, as amended. The act seeks to maximize the use of public property, for public purposes. Toward that end, Congress set in place several goals and restrictions. Section 521 provides the Administrator of the General Services Administration with the authority to make policies and procedures designed to make full use of federal property by facilitating its use and reuse within and between agencies and then by making it available, for public purposes, by other organizations authorized within the law (Federal Property and Administrative Services Act, Section 521, 2007). Section 524 requires agencies to establish inventory control over public property. Agencies are charged to conduct regular reviews to assure that items are being used. Items that are no longer needed for their original purpose must be reported to the General Services Administration for possible reassignment to other agencies or eligible recipients. If required for another purpose, items are transferred to the General Services Administration for possible continued use by the other entities. Agencies are also charged to use the property no longer required by other agencies whenever appropriate (Federal Property and Administrative Services Act, Section 524, 2007). Further, section 546 of the act allows federal agencies to disposition government property, no longer required for the performance of government contracts, according to procedures prescribed by the Administrator of the General Services Administration (Federal Property and Administrative Services Act, Section 546, 2007).

Other laws have an effect on or provide requirements related to government property. The Federal Manager's Financial Integrity Act of 1982 required federal agencies to establish accounting and internal control systems to ensure that assets are not mismanaged, lost, wasted, or misused (FMFIA, 1982). The Chief Financial Officer’s Act of 1990 provided authorities to establish systems of accounting and management controls to agency Chief Financial Officers, including those of agency assets (CFO Act, 1990). The Government Performance and Results Act of 1993 added emphasis to the CFO act in terms of management accountability and reporting (GPRA, 1993).

Regulation

Until 2007, the Federal Acquisition Regulation guidance for management of government property in the custody of contractors was contained in FAR Subpart 45.5. This subpart was incorporated by reference in contract language by the applicable government property clause (U.S. Government, 2007). The issue of the Federal Acquisition Circular (FAC) 05-17, the language moved to the new, combined property clause and became less prescriptive in nature. With the change, contractors are encouraged to use, and government policy allows for the management of government property using voluntary consensus standards and industry leading standards and practices. Much of the language that had long obfuscated the management of property
was excised or clarified. Many of the numerous, longstanding, clauses associated with
the management of property were combined into a single clause, "Government
Property," (FAR 52.245-1). The FAC included a new, single clause dealing with the
management and disposal of property within government installations, "Government
Property Installation Operation Services," (FAR 52.245-2); and retained a slightly
revised "Use and Charges" clause, (FAR 52.245-9). Instructions to contracting officers
and other government employees on administration of property remained in FAR Part
45. In general, the Government Property clause requires contractors to manage
property throughout its life cycle. This includes, but is not limited to requirements to;
care for, preserve, protect, properly use, and report unneeded government property for
reuse or disposition. Under the clause, contractors may be held responsible for the
property should it be lost, damaged, destroyed or stolen while in their custody. For cost
type contracts, the limited responsibility provisions derived from the old "Government
Property, Cost Type, Time and Material, or Labor Hour Contracts" (52.245-5) clause are
contained in the new clause. For most fixed price contracts, the full liability provisions
from the old "Government Property, Fixed Price Contracts" (52.245-2) clause now
appear in "Alternate I" to the new clause.

Case Law

Liability. The need for timely decision regarding liability for loss, damage, or
destruction of government property was the subject of Delta Electric Construction
Company et al. v. US. In this 1971 case, an appeal of an ASBCA decision, the
contractor had sued for breach of contract. They argued that the eleven month period
consumed by the Contracting Officer in deciding to hold the contractor liable for damage
to government property constrained their ability to defend their case. Despite the
lengthy period, the government prevailed. The plaintiff's negligence was determined to
be the cause of the damage and the contract required that the contractor pay for any

In Fraass Surgical Manufacturing, a fire destroyed government property
furnished to a contractor. The contractor attempted to obtain reformation of the contract
to mitigate its liability and recover monies paid to and withheld by the government at the
instruction of the contracting officer. The contractor argued that the government used an
incorrect liability provision, which held the contractor fully liable for all property lost,
damaged, or destroyed under the contract, rather than one which holds the contractor
liable only for the result of willful misconduct or lack of good faith on behalf of the
contractor's management. The contractor requested, received, and accepted an
equitable adjustment for the late delivery of government furnished property. The
contractor then argued that the late delivery of government furnished property increased
the quantity and value of the loss. The contractor also argued that the contracting officer
had not provided proper notice of the contractors administrative appeal rights when
issuing a final decision on the contractor's liability. The government argued that the
statute of limitations had run its course, therefore laches applied. In addition, the
government argued that the contractor had accepted the equitable adjustment as the
sole remedy for the delay in delivery of property and that, as a result, estoppels applied.
The court granted the government's motion for summary judgment where the contractor had accepted the equitable adjustment under the doctrines of accord and satisfaction and where the court determined the contractor's claim to be duplicative. The court denied the government's motion for summary judgment on contractors request for reformation and on portions of the equitable adjustment claim that had not been included in the original request. The court remanded the case to trial for a determination of the beginning of the statutory period and the correct application of the loss liability provision (Fraass Surgical Manufacturing Co., Inc. v. United States, 1974). The trial court did not affirm the government's interpretation of the statute of limitations. The court also did not affirm the contractor's claim that the terms of the contract regarding loss liability were unconscionable.

The court found that the government was correct in its application of the loss liability provision and as such, the mistake was not mutual, therefore did not meet the requirement for reformation. On motion by the defendant, the U.S. Court of Claims adopted and the decision of the trial judge (Frass Surgical Mfg. Co. Inc. v. The United States, 1978).

The Armed Services Board of Contract Appeals heard an appeal of a contracting officer's decision to hold a contractor liable for negligent destruction of government furnished motion picture film in Dynalectron, While the film was not specifically listed within the schedule as GFP, the court held that the Defense Acquisition Regulations Clause 7-104-2 established the liability and the requirements of the specification established the existence of the property as government furnished. The board found in favor of the government and ordered summary judgment for the value of the film and the cost to take the pictures (Dynalectron, 1985).

A number of cases involve assignment of liability for the loss of government property. In United States of America v. Bissett-Berman, et. al. (1973), The U.S. Court of Appeals affirmed the decision of the U.S. District Court for the Central District of California. The court found that the government had settled with the contractor on several counts and that the government failed to prove allegations of negligence. In an appeal of a contracting officer's claim for reimbursement associated with the loss of government property, sold in error during property disposition actions, the Armed Services Board of Contract Appeals sustained the contractor's appeal, finding that the mistake did not involve an act of the contractor's management personnel or by their disregard of government instruction.

**Preservation and Protection.** In Braswell Services Group, Inc. v. U.S. (1991), the contractor appealed a decision of the Armed Services Board of Contract Appeals (ASBCA) before the U.S. District Court for the District of South Carolina. In the case before the ASBCA, the contractor sought compensation for retrieval of boats they were contracted to repair after the boats had been blown ashore in a hurricane. The ASBCA ruled that the contractor was not entitled to a salvage award as the requirement to care for and protect the boats already existed within their contract. The District Court affirmed the decision of the ASBCA.
**Management and Recordkeeping.** A 1978 Appeal of the Gary Aircraft Corporation, before the Armed Services Board of Contract Appeals, found that, while the contractor was required by contract to maintain the records of government property and failed to maintain accurate records, the government was unable to prove losses of property as the government's records were also incomplete (Appeal of Gary Aircraft Corporation, 1989).

**Title**

**Law**

**Progress Payment Property.** General Military Law, in 10 U.S.C. § 2307 (a) allows the government to make contract financing arrangements, including progress payments. Paragraph (d) requires the government to obtain security in the form of a lien against the property contracted for, an account holding the funds, or on property acquired for performance of the contract, as agreed to by both parties prior to allowing advanced (progress) payments. The law goes on, in paragraph (h) to vest title in accordance with the terms of the contract regardless of any security interest in the property, asserted before or after award of the contract (U.S. Government Printing Office, 2007b.).

**Regulation**

There are significantly different and often confused interpretations of the title provisions in government contracts. The clauses in question are the "Progress Payments" clause and the "Government Property" clause. A reading of the relevant sections of the clauses is needed in order to illustrate and understand the underlying confusion.

The Progress Payments clause (52.232-16) provides the following language regarding government property:

(d) Title.

(1) Title to the property described in this paragraph (d) shall vest in the government. Vestiture shall be immediately upon the date of this contract, for property acquired or produced before that date. Otherwise, vestiture shall occur when the property is or should have been allocable or properly chargeable to this contract.

(2) “Property,” as used in this clause, includes all of the below-described items acquired or produced by the Contractor that are or should be allocable or properly chargeable to this contract under sound and generally accepted accounting principles and practices.

(i) Parts, materials, inventories, and work in process;

(ii) Special tooling and special test equipment to which the government is to acquire title under any other clause of this contract;

(iii) Nondurable (i.e., noncapital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment, and other similar manufacturing
aids, title to which would not be obtained as special tooling under paragraph (d)(2)(ii) of this clause; and
(iv) Drawings and technical data, to the extent the Contractor or subcontractors are required to deliver them to the government by other clauses of this contract.

The clause goes on to add:
(6) When the Contractor completes all of the obligations under this contract, including liquidation of all progress payments, title shall vest in the Contractor for all property (or the proceeds thereof) not—
   (i) Delivered to, and accepted by, the government under this contract; or
   (ii) Incorporated in supplies delivered to, and accepted by, the government under this contract and to which title is vested in the government under this clause (U.S. Government, 2009b).

The Progress Payments clause is intended to take title to property, as the Government pays for it. This accomplishes two goals. First, the Government obtains something tangible in exchange for the consideration. Second, the Government has the right to march in and take its property in advance of other creditors. There are arguments as to whether this title serves more as a lien against the property or not. The case law provides that the property is formally titled.

**Other Title Provisions.** The current FAR "Government Property" clause (52.245-1) incorporates the title provisions and from both prior major clauses, "Government Property, Fixed Price Contracts" old (52.245-2) and "Government Property, Cost Type, Time and Material, or Labor Hour Contracts," old (52.245-5). These provisions changed little other than reorganization from the prior language. The operation of these clauses is generally well understood, with the exception of the treatment of indirectly charged property. The applicable section of the current clause reads as follows:

(e) **Title to Government property.**
(1) The Government shall retain title to all Government-furnished property. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall Government property become a fixture or lose its identity as personal property by being attached to any real property.

(2) **Fixed-price contracts.**
   (i) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as “Government property”), are subject to the provisions of this clause.
   (ii) Title to each item of equipment, special test equipment and special tooling acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for
it, whichever is earlier, whether or not title previously vested in the Government.

(iii) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract—

(A) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor’s delivery of such material; and

(B) Title to all other material shall pass to and vest in the Government upon—

(1) Issuance of the material for use in contract performance;

(2) Commencement of processing of the material or its use in contract performance; or

(3) Reimbursement of the cost of the material by the Government, whichever occurs first?

(3) **Title under Cost-Reimbursement or Time-and-Material Contracts or Cost-Reimbursable contract line items under Fixed-Price contracts.**

(i) Title to all property purchased by the Contractor for which the Contractor is entitled to be reimbursed as a direct item of cost under this contract shall pass to and vest in the Government upon the vendor’s delivery of such property.

(ii) Title to all other property, the cost of which is reimbursable to the Contractor, shall pass to and vest in the Government upon—

(A) Issuance of the property for use in contract performance;

(B) Commencement of processing of the property for use in contract performance; or

(C) Reimbursement of the cost of the property by the Government, whichever occurs first.

(iii) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (e)(3)(iii) (collectively referred to as “Government property”), are subject to the provisions of this clause (U.S. Government, 2009c).

Under the Government Property clause, there are several paths by which the Government may or may not assert a right to take title to property. First, all property that was already owned by the Government remains Government property. This property is defined elsewhere in the FAR and the clause as Government furnished property. This definition differentiates between it and contractor acquired property. The Government may, or may not, assert a right to take title when contractors acquire property.

Cost type contracts present a situation similar to that of a progress payments contract. The Government asserts its right to title over property acquired by the contractor with Government funds. Under the clause, the property is titled to the Government when it is either used in performance of the contract, received from a vendor, or paid for by the Government, whichever is first. In much the same manner as with progress payment property, the Government moves to protect its rights to the property by asserting title at the earliest point. While there are exceptions for non-profit
educational institutions and non-profit research institutions; private, commercial contractors may not retain title to property directly paid for with Government funds.

Under fixed price contracts, without any allowable cost items or financing provisions, the Government asserts no right to title for contractor acquired property, unless the items are to be delivered. The clause allows for transfer of title to various classes of property when it is "acquired by the contractor for the Government." Property acquired by the contractor, and not required for delivery to the Government under a fixed price contract, is not considered "acquired for the Government." In essence, the language of the clause only asserts title property that is the product of, and required by, the contract.

Controversy surrounding the title provisions, most often, is associated with property indirectly charged to the Government. While the clause is moot on title to indirectly charged property contractors have argued, and some courts have agreed, that property under paragraph (e)(3)(ii) is titled to the Government. The language provides that all other property, the costs of which the contractor is entitled to be reimbursed by the Government is titled to the Government.

Cases

Arguments have been made that property titled to the Government under progress payments is merely meant to serve as a right to take title or a lien, should the contractor default. In American Pouch Foods, Inc (1984), the U.S. Court of Appeals for the Seventh Circuit affirmed the decision of the US District Court for the Northern District of Illinois, finding that the United States held absolute title to property in a debtor's possession that had been acquired as part of a progress payments contract. The U.S. Supreme Court ruled that property title of the government was paramount to other liens under state law and that title transferred as construction progressed, when so specified by the contract (United States v. Ansonia Brass and Copper Company, 1910). These cases provide that property is, in fact, titled to the Government when specified in the contract and when paid for under progress payments.

A recent case before the U.S. Court of Federal Claims involved the title to manufacturing equipment originally acquired by a predecessor contractor under a letter agreement issued in 1996 which was later definitized by a contract. The language stating that the government had taken title to the property had been deleted from the definitized contract. Government personnel provided additional confirmation of American Ordnance ownership on two occasions. In 2007, the government, wishing to provide the property involved in another contract, asserted title to the property. The court found that, the government had the opportunity to assert a claim for the property for the entire period from 1996 through 2007 and had failed to do so. As such the six year statute of limitations allows by the Contracts Disputes Act had expired and, despite the existence of the government property clause within the contract, the court denied the government's claim of ownership (American Ordnance, LLC v. United States, 2008).
In an earlier case before the U.S. Court of Claims, Norcoast Constructors, Inc., and Morrison-Knudsen Company, Inc (plaintiffs) appealed the decision of the ASBCA, that the contractor passed title to the U.S. for storage tanks and the contractor should have been provided rental on the tanks for the period in which the government used them. The original contract was awarded for the storage and handling of fuel. At the contract's conclusion, the contractor failed to remove the property, in accordance with the requirements of the contract. Subsequently, the government required use of the tanks and asserted title to the tanks through a contract change order. The contracting officer thereby asserted government title, a position that was affirmed by the ASBCA. The plaintiff sued for an eminent domain taking, arguing that the value of the tank was increased by new government work and that the actions of the contracting officer waived the requirement of the original contract to remove the property. The plaintiff and the government did not agree on the value of the tanks or rental associated with government use. The court instructed the ASBCA to determine the value which it determined value to be $40,000. The Plaintiff, seeking $139,000 for rental of the tank, moved for summary judgment and the Defendant, offering only $10,000 cross moved. The court found the actions of the ASBCA to be supported by law and evidence and bound both parties to it (Norcoast Constructors, Inc., and Morrison-Knudsen, 1973).

While these two examples discuss issues directly associated with title to the property, there are a number of cases associated with title and the taxation of federal government property. Among these are several related to defense contractors operating across the country, who seek to avoid personal property, use, or ad valorem taxes on property acquired under government contracts. It should be noted that the government property clause is clear regarding government furnished property, the title to which remains with the government. The question of title, more often than not, comes into play when one considers the operation of the progress payments clause and in association with indirectly charged government property under the title provisions related to cost contracts.

The case law associated with taxation of government property evolves from the Supremacy clause in the constitution, and McCulloch v. Maryland, decided by the U.S. Supreme Court in 1819. The court ruled that a tax imposed by the state of Maryland was unconstitutional and states could not take action to impede the functions of laws enacted by Congress (McCulloch v. The State of Maryland et. al., 1819). Subsequent taxation cases, across all levels of the judicial system, have had differing and sometimes conflicting outcomes.

In a seminal case, United States et. al. v. County of Allegheny (1944), the U.S. Supreme Court reversed the decision of the Pennsylvania Supreme Court and held invalid an ad valorem tax on government titled property being used by a contractor. In a 1955 case, the U.S. District Court for Eastern Michigan found that property purchased by a subcontractor to a government contract, where the prime contractor was operating under the partial payments clause, was exempt from local property taxes (The Murray Corporation of America v. City of Detroit, 1955). In 1956, the Supreme Court of Tennessee found that a government contractor was operating in the interest of the
federal government, under the Atomic Energy Act of 1946, and the contractor's operation and use of government property was not taxable (Roane-Anderson Company v. James Clarence Evans, Commissioner, etc., 1956). The U.S. Supreme Court affirmed the decision on appeal (Carson, Commissioner of Finance and Taxation, v. Roane-Anderson Company, et. al. (1952). In United States of America v. Hawkins County Tennessee, et. al. (1987) the US District Court found that government property used by contractors in performance of government contracts could not be locally taxed. Each of these cases involved property to which title was undisputed.

Contrary to these decisions, the Supreme Court introduced additional considerations related to taxation of the use of government property by contractors. The Court found, in an appeal from the Supreme Court of Michigan, that a company using government property for the business' own private gain could be taxed. (United States v. Township of Muskegon et. al., 1957). The court affirmed that principle, as applied to real property, in United States v. City of Detroit (1958). In United States et. al. v. Boyd, Commissioner (1964) the court went even further to find that contractors who obtained financial benefit from the use of property could be taxed and that they were not so intertwined with the government to be immune from local taxes. In United States v. New Mexico et. al. (1981) the Court found that contractors were not operating as agents of the government and could be taxed.

The issue of title tends to become even less focused when one discusses whether indirectly charged property is taxable. In Motorola, Inc. v. Arizona Department of Revenue (1999), the Court of Appeals of Arizona affirmed the decision of the Arizona Tax Court that refunded taxes charged against Motorola's indirectly charged property based on a judgment that the property was titled to the government under the property clause. Motorola acquired the property in support of both fixed price and cost type contracts. The court interpreted the FAR Government Property (Cost-Reimbursement, Time and Material, or Labor Hour Contracts) clause 52.245-5, to transfer title to both directly charged and indirectly charged property.

**Discussion**

Wyatt (2007) discusses the application of the Christian doctrine to the contract property clause. Walking through the history of the Chamberlain and related decisions, he questions whether or not the Government Property clause will stand as government policy and rate the same regard as other contract clauses incorporated within the contract by operation of law. He notes that the large values of government property, as well as the relationship of the property to contract execution, lead to the conclusion that it is significant enough to merit such incorporation.

An article by King and Kellogg (1995) discusses the issue of title under the progress payments clause. They put forth that the case law upholds the concept that progress payment inventory is titled to the government when so stated in the contract. They argue against the position that the title vesting clause simply creates a lien against the property as unsupported by case law, terming it a "legal fiction." However, they
acknowledge that the fiction exists and believe it will likely require legislative action to provide a positive cure.

In an article from the Journal of Contract Management, Goetz (2008) reviews the contract clauses and case law associated with title to government property. He suggests that the current legal interpretations result in significant unintended consequences. He concludes that, if indirectly charged property is titled to the government, the government must take action to prescribe rules surrounding all aspects of its life cycle.

**Conclusion**

There are areas of government property which remain controversial and require further legislative action, regulatory change, or court decisions. The question of title under progress payments remains debatable, though the case law would seem to support government title to items acquired and paid for. The question of taxation is a thorny thicket of cost; balance of power between federal, state and local entities; and contractor profitability. The interpretation that indirectly charged property is government property leads to a greater question. That question is: how can contractors retain the government property at the conclusion of the contract without running afoul of the "conversion to private use" provisions of the criminal code.

It would be impossible, within the confines of this paper, to discuss all aspects of the associated with provision of government property. As such, other areas of interest to be explored include issues associated with storage and disposition. Each of these areas, if not properly executed, may result in significant cost. Concerns with the environmental impact of government property and its ultimate disposition are growing with each day. Loss of personnel experienced in the management and administration of property to retirement and other professions, while the quantity and value of the property itself continues to grow is a continuous concern. Knowing this, Contracting Officers and contractors alike are well advised to consider carefully the legal implications of the provision of federal government property to contractors for performance of contracts.
References


