

## Knowledge Retention for Acquisition Professionals

Acquisition Professionals are difficult to find. As examples, the Department of Homeland Security has over 50 open vacant slots while the Department of Army has over 100. Although the Defense Acquisition University and the Federal Acquisition Institute educate hundreds of professionals each year, these efforts are not enough to meet the growing demand or fill the vacancies.

Whether government program office or contractor, the problem is the same - the Acquisition Workforce is strained. Trained acquisition professionals are retiring and the projections for the next few years are alarming. The government and its contractors are faced with the challenge of retaining this knowledge in a way that it can be used by new acquisition professionals with far less experience.

### The Challenge

At the 2007 Executive Leadership Conference, the Executive Committee of the US Government CIO council unanimously stated that one of their key issues is the retention of acquisition knowledge. As current program managers, contracts officers, contracting officers technical representatives, and program control personnel continue to retire at very high rates, the drain of knowledge and expertise from the government program offices is significant.

New acquisition professionals are being recruited. According to one panel of OMB, DOD, and GSA leadership, the quality of the new acquisition professionals is outstanding. Yet, they are missing the historical basis to be able to make quality decisions at a pace required to keep programs moving forward.

### A Cracked Foundation

In December 2006, O’Keeffe and Company conducted a survey of acquisition professionals in the government. The survey keyed in on some of the basic fundamental steps in a program. One question it asked was, “Why do Program Managers fail to establish an effective baseline?” The results were significant. There were four answers that consistently scored the highest as demonstrated in Figure 1 below:

1. Lack of personnel.
2. Lack of training.
3. Timelines unrealistic.
4. Do not have the tools and data needed.

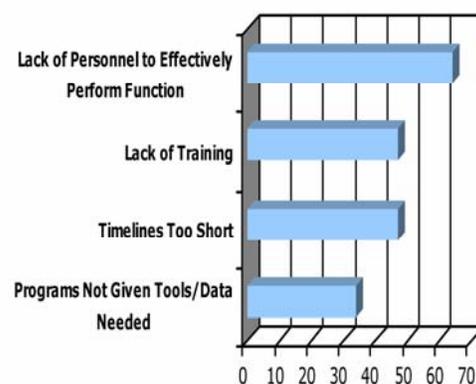


Figure 1.

When asked if their program and project teams:

- Have adequate training in risk identification and management? 77% said they did not.
- Have adequate training in technical baseline development? 73% said they did not.

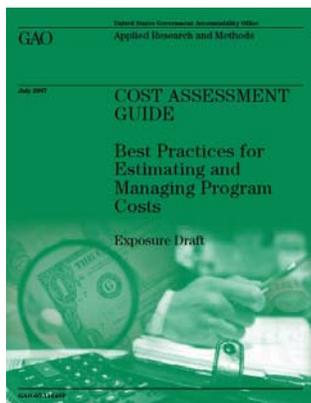
- Have necessary methodologies in place to collect information so they can adjust baselines when changes happen? 60% said they did not.
- Have adequate tools to manage cost estimating, control, and reporting? 54% said they did not.

These are only a few of the questions asked in the survey, but the trend is significant – the foundation necessary to build effective programs is cracked. The study concluded:

***Despite the importance of solid cost estimates to project success, agencies have neither the training, tools, nor processes available to develop and manage realistic baselines.***

### An Independent Assessment

The Government Accountability Office (GAO) sees the problem in a similar light. They are concerned that not only is the acquisition workforce not properly equipped, but they don't have the knowledge of best practices either. GAO took action and created a working group that included experts from various executive branch agencies, contractors, and staff. This working group took on the challenge of documenting the best practices for cost estimating and control for all government programs.



The working group met over a 13-month period and brought together lessons learned – both good and bad. The result is a well-documented book on government and industry best practices. This book will be used as a guide for all future GAO audits of programs.

One of the significant achievements of this working group is that the best practices of cost management have now been documented. Critical elements that all government and industry participants agreed to include:

1. A 12-step process throughout a program's life cycle for tracking and controlling costs.
2. An emphasis on analyzing risk throughout the program.
3. A methodology for reevaluating the program's costs and schedule with an understanding of the impact to the program baseline.

### The Response

Agencies and Program Offices need to respond to this Cost Assessment Guide immediately. To do so required them to embrace a concept of an Acquisition Knowledge Environment (AKE). AKE is not a model or a piece of technology. AKE is a new business approach that allows organizations to capture acquisition knowledge of the senior workforce and retain it for use after they retire. Additionally, it provides a methodology for all future acquisition workers to leverage the lessons of the past.

Technology is available today to assist in creating an AKE and retaining the critical knowledge organizations need for success. The key is to have a technology that new acquisition professionals will use, while leveraging the technology that the retiring professionals have used. Essentially, there are three key elements the new AKE needs to offer in order to repair cracks in the foundation:

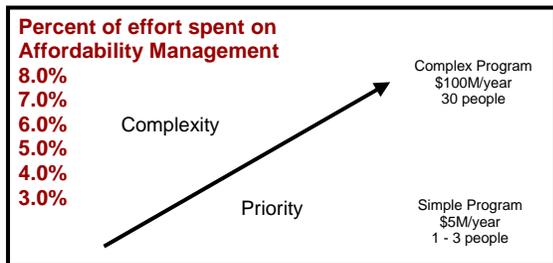
1. A **methodology to capture historical evidence** in existing formats with minimal restructuring. Since most program modeling is done in Excel, the technology needs to be able to accept Excel models easily. Additionally, it needs to be an open environment so that other models and tools can be joined with it, as necessary.
2. It needs to be **a technology that provides a collaborative environment** where new acquisition professionals can share their results and leverage the successes (and failures) of others.
3. There should be **on-line training** made available for professionals. This will allow them to quickly adapt to changes made and learn as the need arises.

These three elements are the keys to success for any future acquisition workforce. There are additional elements that only make sense from a technology perspective – open architecture, server-based, etc, but these three are the key functions needed to be successful.

Program Offices are faced with a significant challenge. What should they do? Is it a program office's responsibility to establish an AKE and assure compliance with the GAO Cost Guide or is it an agency responsibility? The answer is – both are responsible. Both will share in the creation of the AKE as well as the implementation. The Agency will need to assure the technology and business processes are in place and supported by management. The Program Office will need to assure their business practice supports the knowledge retention efforts, as well as the practices outlined in the GAO Cost Guide.

This combined effort will assure that all programs are consistent and all new programs build on the heritage of the current programs.

A question most people would have is how much is enough? Clearly, to put together an AKE would require a process of gathering resources, doing an inventory of data and models, and implementing a new process. Based on PRICE Systems' 30 years of acquisition support, the following diagram illustrates a good benchmark for most programs.



Some programs will need more people and some less. There is no "magic" number. There is, however, a minimum number and that is usually two. One person can effectively do the modeling, but it takes two people to do an effective assessment.

A best practice, as described in the GAO Guide, is not to do a little at a time. That approach takes too long and does not allow for gains. Additionally, it doesn't enforce a new business practice which is essentially what is needed. Rather, the best practice is to choose a program and implement the new AKE strategy throughout; then enforce it to assure people use it. This usually means a culture change. A culture change can be difficult. However, best practices have shown that once an acquisition environment is established that is valuable, people will use it and reuse it. The key to success is making the commitment to build an environment. It doesn't have to happen at the beginning of a program either. If a program can implement it at a logical break point (milestone or deliverable), then there is a high potential for repeatable success.

Timing is critical for the success of an AKE approach. It needs to be done now while the acquisition workforce still has the ability to capture historical models and notes. Delays will only make the problem harder to solve and the impact of the loss of knowledge greater.

To summarize, the benefits of an AKE are:

1. To capture acquisition knowledge from the existing workforce.
2. To document that knowledge in a way that encourages others to use the knowledge.

3. To provide a methodology for future acquisition worker to leverage lessons of the past.

In short, an effective AKE will allow organizations to retain their acquisition knowledge for future generations to learn quickly.

### PRICE Systems' Role

PRICE Systems has been diligently working this issue for several years. We believe that all program offices and agencies should:

- Initiate projects with sufficient funding based on accurate initial estimates and quantification of risks
- Make investment decisions using credible, auditable estimates and quantification of risk versus value
- Make wise, informed choices concerning which projects to delay, defer, or cancel based on complete understanding of cost and schedule
- Have total visibility into their project performance and organizational productivity

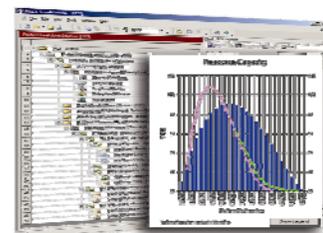
PRICE Systems' technology, our methodologies, and our training are all focused on achieving these goals. Our success depends on an acquisition workforce that is fully equipped, fully trained, and without any cracks in the foundation.

### The Technology

The PRICE Systems technology, TruePlanning®, is a collaborative, server-based system that allows users to share models and data. Additionally, any Excel-based models can easily be integrated into the TruePlanning® framework. If the program office or agency doesn't have existing models, TruePlanning® comes with models that can be easily modified for use. By using these templates, an AKE is started immediately.

For those who have no historical data, PRICE Systems has an online repository of historical data that can be used by any of our customers.

PRICE Systems has two basic suites of software with several add-ons. One suite is for IT programs and allows users to estimate, track, analyze and report on costs, schedule, and risk associated with software, network, and other information technology programs. The second suite is



designed for the weapons system program office and includes the ability to support a fully integrated weapons system including hardware, software, and infrastructure technology. Both suites are designed so that individuals can work on different parts of a program and each part can be rolled into a whole system seamlessly without transferring files.

Reporting through different Microsoft products, such as MS Office and MS Project, is provided, plus a few other well-used reporting tools. If program offices use Microsoft Project, the PRICE Systems tools provide a seamless two-way integration. That way as planners change their plans, they can analyze the cost impact before actually implementing those changes.

### **The Methodology**

PRICE Systems has been supporting program offices, government agencies, and government contractors for over 30 years. Throughout these years, we have developed best practices which is one of the reasons we were asked by GAO to support the development of their best practices guide. Some of the best practice methodologies we have developed include, but are not limited to:

- Budget analysis and alternative assessments
- Business case analysis
- Proposal assessment and negotiation support
- Cost proposal development
- Comparative analysis

Our subject matter experts are meant to supplement a team and transfer knowledge to that team. This approach works great for creating a standard and implementing an AKE approach.

### **The Training**

In 2007, PRICE Systems rolled out its PRICE University. This on-line virtual training facility has training for all the PRICE Systems technologies. Additionally, it houses:

- Our monthly training seminar which is recorded and available via webcast.
- Presentations that offer insight into issues relevant to the acquisition workforce.
- Over 300 white papers with documented methodologies from our customers worldwide

PRICE University allows our customers to train when they need to be trained. Additionally, it allows them to keep in touch with the latest trends, techniques, and innovations in the acquisition community. We also offer on-site workshops to help mentor individuals especially those in a complex program office.

### **Summary**

Knowledge Retention in the acquisition workforce is a significant issue for government and industry. Nobody has a “silver bullet” solution. However, there are available solutions that make sense today. GAO and other government agencies are involved in solving the problem. All of them see that action is needed.

By taking the right actions, the problem can be solved and improvements made that will provide a method for the new generation of acquisition professionals to become trained and effective very rapidly. This solution requires a method of capturing existing models, processes, and data while leveraging technology that is open and easily integrated into the agency or program.

PRICE Systems has been working with the government to solve this problem. We have the technology, methodologies, and training to insure the new acquisition workforce is successful.

### **About the Author**

Larry Reagan is the Vice President for Government Solutions at PRICE Systems. He spent several years in the government as a certified acquisition professional. Along with his team, located in the Washington, DC area, he provides solutions to various government clients and contractors that support the government. He can be contacted at [Larry.Reagan@PRICESystems.com](mailto:Larry.Reagan@PRICESystems.com).

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