



## Knowledge Capture, Transfer, and Reuse

### Ensuring Relevant and Critical Knowledge of the Federal Acquisition Workforce Is Retained and Leveraged

By Bill Kaplan, CPCM, Chief Knowledge Officer

*There is no instantiated process within the federal acquisition community to capture and reuse the workforce's relevant information, experience, and insight. This Special Report presents ways to ensure such knowledge is not only retained, but also passed along to the next generation of professionals.*

**F**ederal agencies across the government are facing imminent acquisition knowledge loss at an unprecedented pace as an increasing number of knowledgeable and experienced professionals at various levels depart the government. The situation is serious as there is not a sizable and equally knowledgeable pool of successors to replace them.

The loss of this critical knowledge—the accumulated experience and insight of this professional workforce—must be addressed now. This *Special Report* examines this challenge and presents ways to ensure relevant and critical acquisition knowledge is not only retained, but also transferred to the next generation of acquisition professionals.

#### Why are we facing the challenge of knowledge loss?

The summary answer is that there is no instantiated<sup>1</sup> process within the federal acquisition community to capture and reuse the workforce's relevant information, experience, and insight on a consistent or disciplined basis. We have not taken action to mitigate the loss.

Underlying this summary answer are several factors contributing not only to the *loss of knowledge*, but also to the challenge of *mitigating this loss*. Two major factors contributing to the loss of knowledge are: (1) the increasing size and complexity of the acquisition workload (see sidebar on page 2); and (2) the widely recognized decline in the numbers of professionals in the acquisition workforce. Critical know-how and experience developed over many years will leave with this retiring and transitioning workforce, and the workforce that will remain, as with any changing workforce, “doesn't know what it doesn't know.”

A third major factor, which contributes to our mitigation challenges, is that there has been no formal, consistent knowledge capture and reuse framework that is an integral part of our acquisition processes—a framework that is *part of the way we work*.

#### What must we understand to address this challenge?

Effectively addressing this challenge—within the context of an ever evolving acquisition workforce that is tasked to deliver on increasingly complex agency missions—requires that we first understand three foundational concepts:

- The federal acquisition community is an *experienced-based profession*, in which the skills and insight necessary for success are learned primarily through hands-on experience and mentorship on the job. Expertise in all facets of the acquisition lifecycle

**The Workforce/Workload Dichotomy**

**D**uring the past six years, the relative growth of procurement obligations has outpaced budgets with an increase of 91 percent, compared to growth in discretionary budgets of 71 percent, while the procurement workforce has been in decline. In addition, there is anecdotal evidence that the overall quality of the workforce has diminished as well. This is despite decades of efforts to professionalize the workforce with college degree and training requirements. Although we have many fine, well-trained, high-performing individuals in the contracting workforce, when asked whether today’s workforce is generally better or worse than that of 10, 15, or 20 years ago, most of those in a position to know answer, “It is worse.”

We see the effects of a diminished workforce every day in our consulting work, in our training institute’s students’ concerns and frustrations, and, of course, through our studies and assessments. Consider the effect of increasing budgets in the past six years for the 18 largest executive branch agencies and the seemingly counterintuitive decline in acquisition workforce.

Year	Discretionary Budget (in millions)	Change from Baseline	Procurement Obligations > \$25,000 (in millions)	Change from Baseline	Workforce	Change from Baseline
2000	\$549,320	Baseline	\$197,764	Baseline	33,655	Baseline
2001	\$614,089	12%	\$213,605	8%	33,089	-1.7%
2002	\$695,200	27%	\$232,617	18%	33,085	-1.7%
2003	\$801,429	46%	\$287,532	45%	32,370	-3.8%
2004	\$842,116	53%	\$310,980	57%	32,167	-4.4%
2005	\$937,390	71%	\$378,682	91%	32,521	-1.7%

Not only are there fewer personnel, but also the skills needed in today’s more sophisticated business environment have changed vastly. As a result, it is difficult for the professional acquisition workforce to answer more effectively the call of adding value to their agencies’ missions. Those remaining sometimes feel depleted and that they only have their “finger in the dike.” Morale is affected, which in turn diminishes creativity and flexibility and the desire to embrace new initiatives that are part of the cultural change needed to transform government acquisition.

(for example, requirements development and trade-offs, understanding and managing technical risk, cost realism, logistics, and training) has evolved and is understood specific to the context of the “business of government acquisition.”

- Because of the experienced-based nature of the profession, using a combination of technology, training, and education alone will not suffice. There must be a deliberate, structured means to capture and transfer the requisite “know how” and “know why” that comprise the experiential side of this multidimensional profession and skill set that is at the heart of efficiently and effectively acquiring goods and services for the nation.
- The current knowledge and workforce relationship is out of alignment with the desired or “ideal” state of this

relationship. Too much acquisition experience and insight resides disproportionately within the senior levels within the workforce, and not within the mid or junior levels of the workforce—the next generation of leaders.

**How is the workforce/knowledge relationship out of alignment?**

In the desired relationship, the *collective* knowledge of the workforce is an inverse function of the experience and age of the workforce. While the level of experience and insight should be naturally greater at the senior levels than at the mid-level and junior levels in the workforce, ideally, the number of senior-level employees is far smaller than the number of mid-level and junior members combined.

The net effect: there is a smaller base of at-risk knowledge due to the relatively small size of the senior pool. Figure 1 conceptualizes this desired relationship between seniority and the degree of knowledge, insight, and experience.

However, over the past 30 years, the federal acquisition workforce has evolved into a workforce size/knowledge relationship in which a greater number of seniors rather than juniors and mid-level professionals has the greater *share* of knowledge and experience, due to the sheer size of the senior pool relative to the rest of the workforce. This current relationship, conceptualized in Figure 2, is a distortion from the ideal. The consequence of the distortion is that knowledge disappears rapidly as large numbers of the senior workforce depart within a fairly short time period.

Reestablishing the desired relationship requires that we transfer knowledge and insight from the soon-to-be departing seniors to mid-level and junior personnel (Figure 3).

### Are there actions the government can take now to address this imbalance?

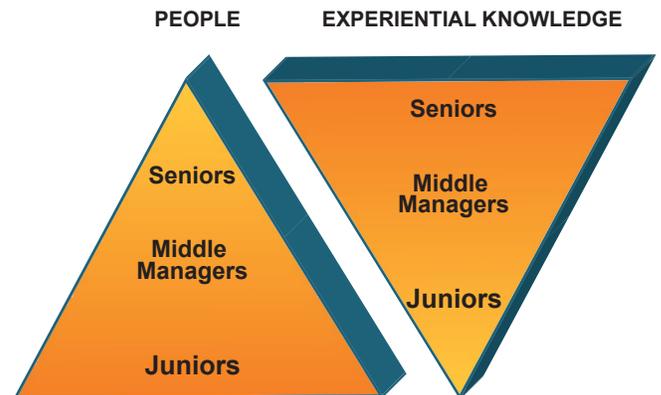
Yes. While the *distribution* of the federal acquisition workforce cannot be reshaped overnight, there are actions agencies can take now to ensure the knowledge resident in the workforce seniors is effectively identified and transferred before it is lost forever. These actions will move us closer to the desired relationship, so that our acquisition workforce can “operate faster than the speed of change” now being confronted.

This requires us to think differently about how knowledge and experience must be leveraged for success, not only across the government acquisition workforce, but also across an agency workforce. The following are some ideas on how to begin to do this successfully.

At the agency level:

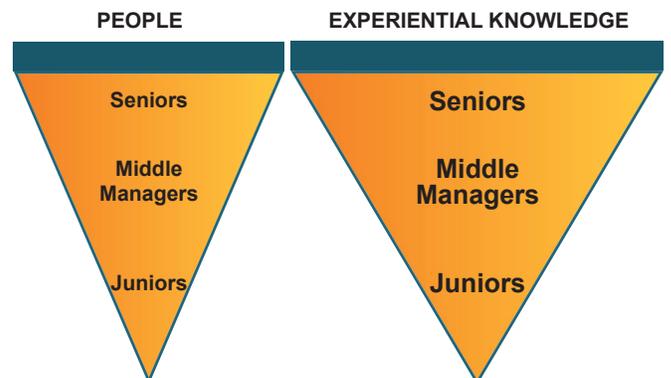
- Create a common approach for knowledge capture and reuse that embeds a collaborative behavior and a sharing approach to sustain and broaden impact within the profession
- Identify critical subject areas
- Identify those junior and mid-level personnel who will be trained to capture knowledge in the critical subject areas and begin to transfer the necessary knowledge, experience, and insight
- Establish mentorship opportunities for the next generation workforce to ensure relevant knowledge and experience are transferred efficiently and with minimum impact on the workforce

Figure 1: Desired Workforce/Knowledge Relationship



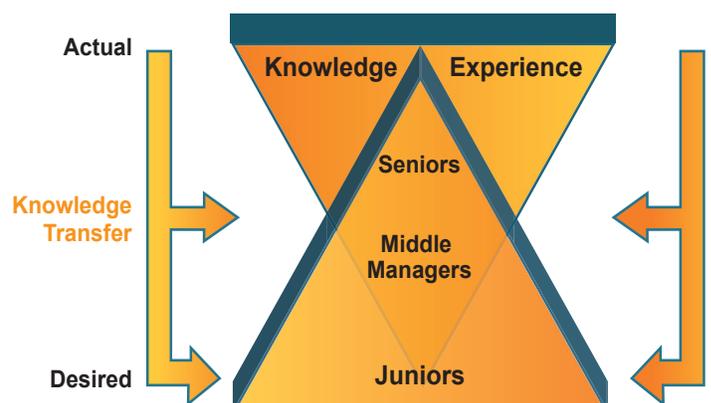
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Figure 2: Actual Workforce/Knowledge Relationship



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Figure 3: Moving from Actual to Desired



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- Establish a continuing relationship or dialogue with those who have retired, to retain their critical experiences in key areas and to keep them involved
- Focus on carefully chosen pilot projects to demonstrate success. Enterprise-wide or systemwide change rarely, if ever, succeeds without proof and an answer to the “what’s in it for me” question for all stakeholders
- Instantiate within the agency acquisition infrastructure a “capture and reuse” framework and knowledge-transfer methodology that will deliver measurable results
  - Government-wide:
    - Create a dialogue between the various levels of the federal acquisition workforce and those that support it (for example, industry and academia) to explore ways to enable the critical knowledge to surface for use at every level
    - Identify the practical and critical challenges and needs of the next generation federal acquisition professional and capture for reuse the current workforce’s experiential knowledge in those critical subject areas
    - Develop an archive of critical knowledge that can be exploited by all subject areas within the government acquisition profession
    - Create broad stakeholder buy-in by identifying and taking on some of the most difficult problems facing the federal acquisition leadership over the next three to five years

### What are the characteristics of organizations successful in knowledge sharing?

Organizations that can move knowledge effectively across the organization to improve their performance share the following attributes:

- They have created a model or framework for “performing and learning”—sharing experience and insight from doing, supported by appropriate enabling technology—that enables people at all levels in their organization or workforce to improve their performance.
- They recognize and understand that helping people and teams learn *before, during, and after* the work they do is *the single, most effective way* to improve performance in the short term and establish the value of capturing, transferring, and reusing knowledge in the long term.
- They ensure experience and learnings are captured, stored, and made accessible after each project in a format designed to meet the needs of the reuser of the knowledge.
- They have a process in place to integrate captured knowledge with what the rest of the organization knows and to make it visible and usable for others.
- They have defined responsibilities for maintaining all knowledge processes and activities.

- They maintain facilitated networks or communities through active participation within the organization in all areas that drive organizational performance.

We first focus on what must be understood to create a knowledge framework, then turn to a discussion of learning “before, during, and after” as an integral part of performing and learning.

### What must an organization understand to develop and implement a successful knowledge capture, transfer, and reuse framework?

To effectively develop and implement a successful knowledge capture, transfer, and reuse framework, an organization must understand the following key concepts:

- There must be senior leadership advocacy for the strategy and subsequent effort that transcends the organization.
- Transformational change requires experienced change agents.
- Delivering specific, tangible, business-driven performance improvements must be a goal.
- The real cost and the most difficult effort lies in maintaining and sustaining the strategy and framework being executed.
- Embedding and integrating a simple set of core capture, transfer, and reuse practices that are easily understood, supported, and performed on the job and in the job is necessary to embed a sustainable way of working.
- Existing investment in the organization’s technology base should be leveraged.
- It doesn’t have to take a long time to do this, with the right leadership and strategy.
- Most important, success rests in focusing on that most important “people” part; failure to focus on people is one reason many knowledge initiatives do not succeed.

### Where should implementation of a knowledge capture, transfer and reuse framework start?

In our view, there are several key steps to creating a knowledge capture, transfer, and reuse framework:

#### Step One: Recognize and appreciate the value of long-term knowledge capture and sharing

We must start with the recognition that it is too late to wait until people have announced their retirement to begin to capture their relevant knowledge and experience. Ide-

ally, capturing knowledge so that it can be reused must begin as soon as people enter the workforce and must become part of an ongoing framework within organizations' operational and business processes.

There is an unfortunate philosophy that “Knowledge is Power,” too often demonstrated as a reluctance by individuals to share what they know and to mentor others. We have found the opposite philosophy to be true. The ability to move knowledge across an organization or workforce creates notable, sustainable, and continued improvements in performance.

The recognition and appreciation of the value of sharing knowledge must be endorsed and truly encouraged by an organization's leadership and entrenched as part of an organization's day-to-day processes and long-term culture.

### **Step Two: Evaluate how you currently capture what you know and reuse it**

Before you can make plans to develop or improve a knowledge capture, transfer, and reuse framework, it is critical first to take an introspective look at your organization. The following questions must be considered to move forward:

- What is “critical” knowledge and where does it reside within or outside our acquisition workforce?
- What information has been captured and made available to the acquisition workforce?
- Does the workforce know where to find the information and experience that will help it on current and future projects?
- What is being done to ensure the critical knowledge possessed by skilled and experienced government acquisition professionals can be transferred to the next generation?
- What is being done to capture critical experiential knowledge from leaders before they depart?
- What is being done to engage the workforce and those they support to ensure workers share the critical information that should be transferred?
- What is being done to minimize the impact of this knowledge loss, knowing that it normally takes a long time to gain and mature this experience?
- What is being done to minimize the risk of moving capable but inexperienced professionals into vacant and critical subject matter and leadership positions?

If the answer to some of these questions is “little” or “nothing” or “I don't know,” the development of a knowledge sharing and management framework and action plan is essential.

### **Step Three: Choose a place to start to develop a knowledge-transfer framework**

It takes time to build and instantiate a knowledge capture, transfer, and reuse framework, but the longest journey begins with a single step. After evaluating your current framework, pick two or three of the most critical areas that you need to begin to address now. What qualifies as critical to one organization may not be critical to another, so this needs to be carefully considered in the context of your organization's current operations and mission.

Possible critical areas might range from high-level strategic issues to tactical-level “get it done” issues. They might include—

- Lessons learned on presenting to the agency's investment review board in a way that will ensure approval of a project: What has worked in the past and what hasn't?
- Insight gained from involvement in the agency's previous and current major acquisitions: What is the “know how” and “know why” of why they succeeded or why they did not?
- Innovative contracting efforts: Which experiences bear repeating and which have you learned not to repeat in the future?

In each of these limited examples, there may be established, documented *procedures* that will walk junior or mid-level staff step-by-step through processes. But the real value in transferring knowledge lies in the experiential knowledge—those lessons learned that often reside only in individuals' heads. These “nuggets” are invaluable to the organization . . . but they are the most difficult to capture, and integral to the people side of the effort.

The key to capturing and transferring—and then reusing—that knowledge lies in establishing and implementing a knowledge-transfer framework that makes performing and learning part of the way your organization operates.

### **What should such a framework consider?**

When developing a knowledge-transfer framework, consideration must be given to (1) ensuring the most relevant and critical knowledge and experience is transferred, and (2) deciding exactly what this knowledge and experience constitutes. In doing so, be realistic. You cannot possibly capture or create an encyclopedia of everything everybody knows; it is critical to focus knowledge collection and transfer efforts on that knowledge that is most valuable to the continuity and sustainment of the organization.

Consider also that the framework should be focused on the concept of *connection, collection, and collaboration*. *It is most critical to connect people . . . then nurture*

the culture that will get them talking and sharing, to leverage their insight and experience across the workforce.

And consider that technology is not the answer in and of itself, though we have observed that that is where most organizations tend to start their knowledge management efforts, because you can touch it and see it. Technology and information management alone cannot address the challenges described for two reasons: (1) individuals typically just want to get their work done, and they may not go through the extra steps required to learn how to use what is provided as technology or tools, and (2) there must be a well thought out process for defining, capturing, and reusing the relevant knowledge in the organization that provides the “sense making” for efficient and effective execution of acquisition processes.

### How can we enable people and teams to learn before, during, and after their work as part of the way they work *and* make this learning accessible to others?

Organizations that can move knowledge effectively across an organization to improve their performance recognize and understand that helping people and teams learn *before, during, and after* the work they do is *the single, most effective way* to improve performance in the short term and establish the value of the framework in the long term. There are several specific facilitated processes for learning before, during, and after work activities that have proven to be very effective.

- “Learning before doing” is supported through a “**Peer Assist.**” This is a facilitated process that targets a specific business or operational challenge, imports knowledge from peers outside the team, identifies new possible approaches and new lines of inquiry, and promotes sharing of learning with each other through established networks or communities.

*An example:* An acquisition team is conducting its first series of one-on-one market research sessions consistent with the seven steps approach to acquisition. There are others in the organization who have conducted this type of market research session on a regular basis. The experienced individuals assist their peers in preparing to conduct the session. They share their insight into the process based on their previous experiences.

- “Learning while doing” is supported through the “**Action Review.**” This is a team-focused tool to “learn in the moment” so that the new learnings can be immediately applied to the process or activity—maybe even the same day. Evolved from the U.S. Army After Action Review, it

asks four questions immediately after performing:

1. What was supposed to happen?
2. What actually happened?
3. If different, why are they different?
4. What can we learn from this and *do right now?*

- “Learning after doing” is supported by the “**Retro-spect.**” This is a facilitated process that takes place immediately after a team completes a major project/process or project/process phase or activity. This process of inquiry seeks to understand what was learned that can be applied by other teams in the future based on the experience of the previous team. It makes learning conscious and explicit and provides closure for the performing team.

*An example:* Like the other learning processes, Acquisition Solutions has incorporated the retrospect into the way we work. For example, after every client consulting engagement, we convene a meeting of the primary stakeholders in the project to assess what we did well (and capture it) and what might have gone better (and learn from it). The retrospect process forces team members to take time out and give thought to what happened and why, resulting in sharing of information and knowledge that can be applied—perhaps more effectively—the next time such a project is launched.

The experience and learnings are captured and stored after each project or event in a format designed to meet the needs of the reuser of the knowledge. This knowledge needs to be stored in a knowledge repository easily accessible by others in real time, so that when facing a specific challenge or opportunity they can access the information, experience, or insight recognized by the organization as critical.

Often, as a result of the processes of capturing, transferring, and reusing, communities of practice<sup>2</sup> or networks evolve based on the subject matter or operational performance area. The collaboration resulting from a context-specific community or network creates an environment for self-awareness to grow, so real learning can occur. It can institutionalize critical knowledge in hours and days instead of years.

### Has anyone implemented such a knowledge capture-transfer-reuse framework?

Yes. Acquisition Solutions has developed and is using a proven and effective knowledge capture-transfer-reuse framework as part of the way we work.

We view knowledge as comprising all the information in the company and all the experience and insight

in the company. We leverage and focus this knowledge, in context, to improve our individual, team, and corporate performance and to deliver value to our employees, our company, and our clients. This enables our collective workforce to make the best decisions and provide the best solutions. Figure 4 illustrates the concept.

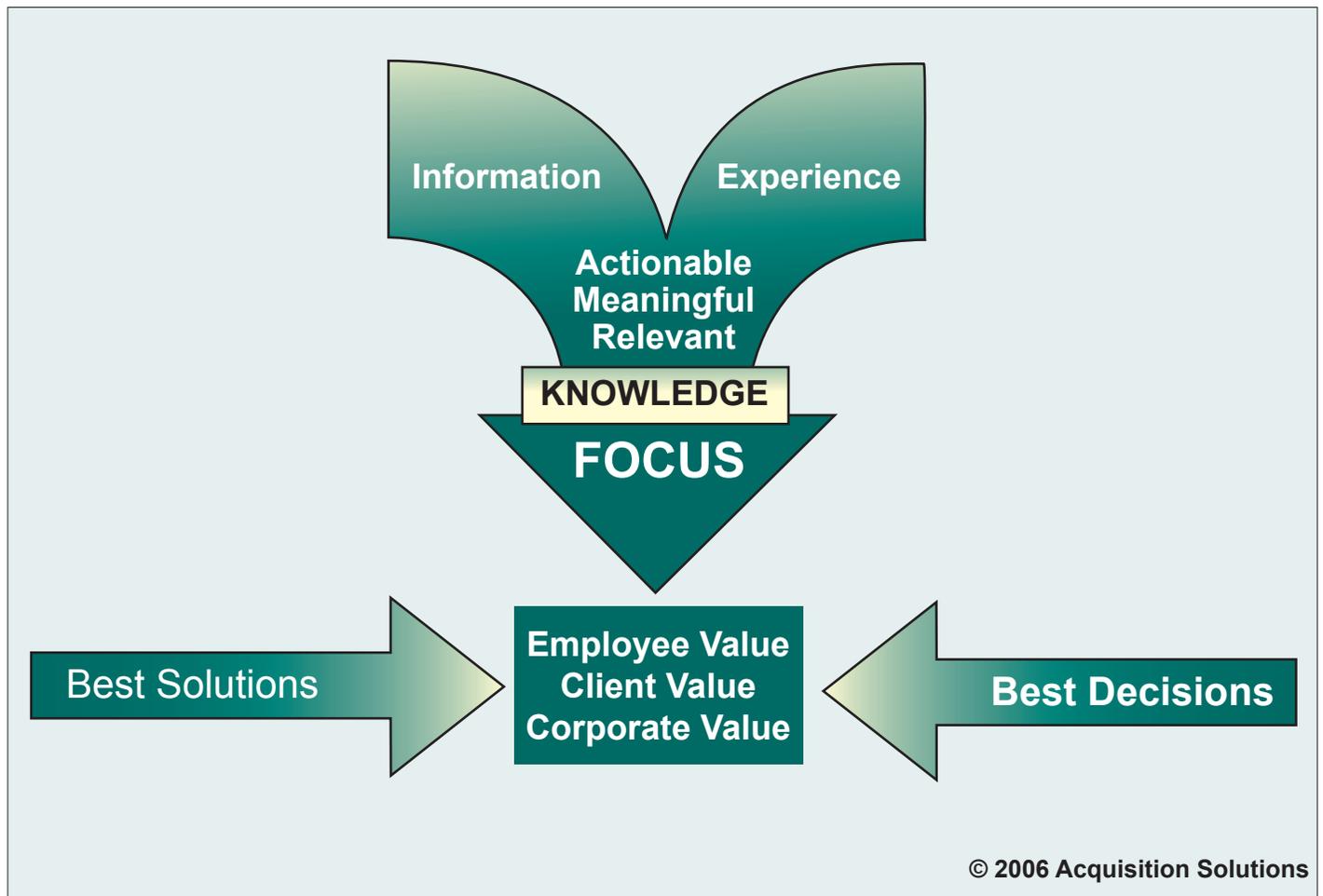
Based on the concepts of *connection*, *collection*, and *collaboration* married to a *discipline of learning before, during, and after process execution*, our framework provides our professional acquisition workforce with the ability to access *in real time* not only codified knowledge (best practices, documents, templates), but also the most current tacit knowledge (experience and insight) that is the “know how” and “know why” of their practice and subject matter areas.

To enable our workforce to access this knowledge for reuse, we developed a proprietary web-enabled Acquisition Solutions Knowledge Center™. This Knowledge Cen-

ter, accessible 24/7/365 by our workforce, is continually updated—with lessons learned captured from our retrospects, insights captured on video, and templates we have rated based on their effectiveness—using the most current workforce knowledge and experience. Figure 5 (on page 8) expands on the conceptual model outlined in Figure 4 to provide the detailed framework we have implemented.

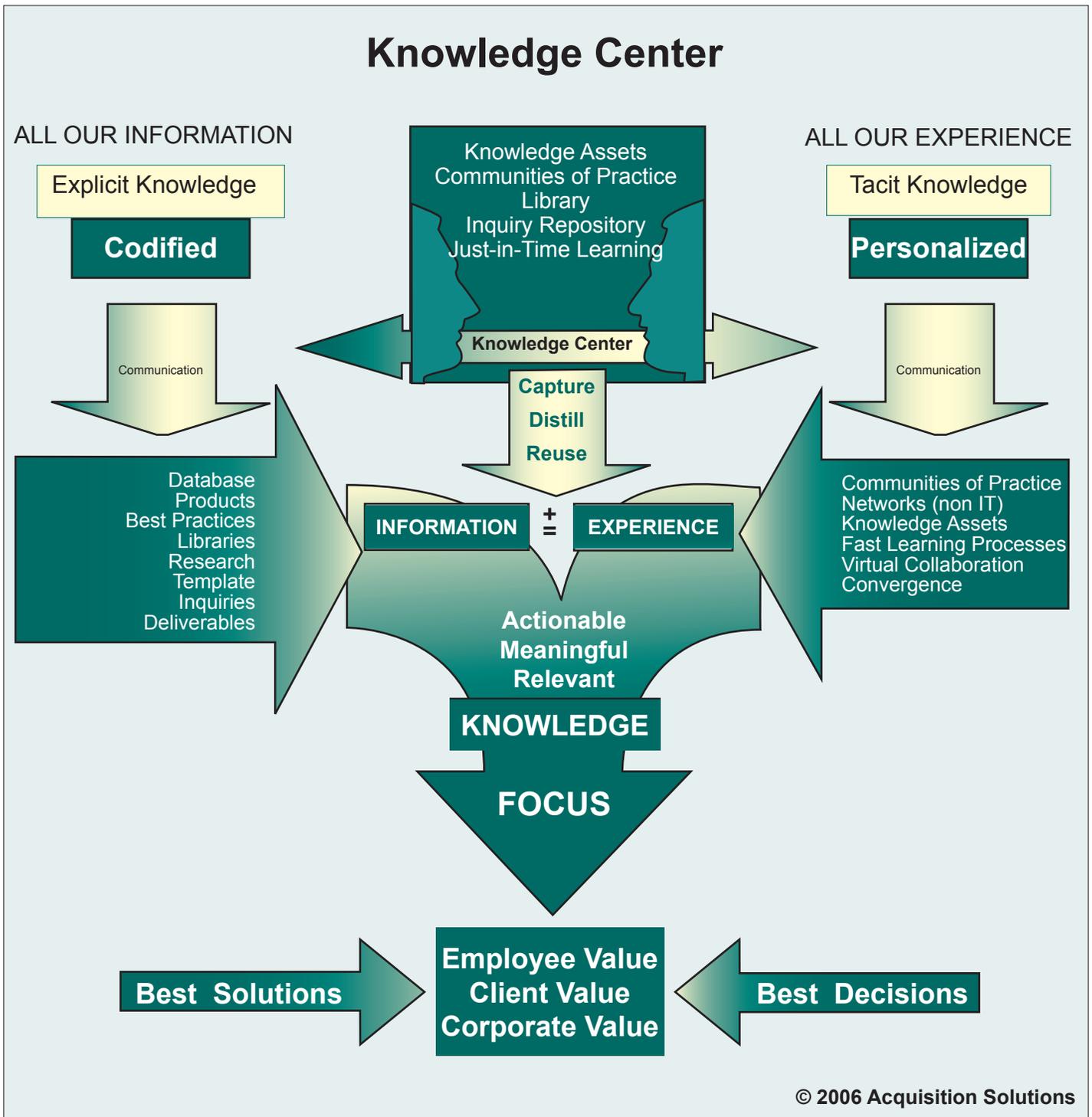
The concept is simpler than it looks. Depending on the context of the challenge or issue we need to address, our workforce, through access to our Knowledge Center, accesses and combines the needed relevant explicit knowledge (documented or codified) with the relevant tacit knowledge (experience or insight that has been captured through the learning before, during, and after activities that are part of the everyday operations of our workforce) to enable us to think differently about the challenge or issue facing us.

**Figure 4: How Acquisition Solutions Views Knowledge**



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Figure 5: Leveraging What We Know  
Knowledge at Work



## Final Thoughts

The loss of critical workforce knowledge and experience will not be solved by hiring alone. New practices, processes, and methodologies are required to begin the journey toward a more knowledge-enabled acquisition workforce that can address the continuing challenges facing the acquisition workforce today and that will continue to challenge the acquisition workforce in the future. Techniques such as peer assists and retrospects have evolved

among knowledge management practitioners to create continually learning and sharing workforces that get to the core of the “know how” and “know why” of what they do. To stay ahead of this change, you have to be able to operate faster than change itself.

Effectively and efficiently capturing, transferring, and reusing our acquisition knowledge is clearly one way to begin to do this—but we have to start now: connect, collect, and collaborate. ♦

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## Endnotes

- 1 Instantiate means “to represent (an abstract concept) by a concrete or tangible example.” In this case, it is used to represent the concept that the capture-transfer-reuse model is “baked-in” to the way we operate; the examples are apparent daily and operate in an almost transparent manner.
- 2 A Community of Practice (CoP) is a voluntary group of peers, practitioners, and other individuals whose members regularly engage in sharing and learning, based on common interests, to improve their individual performance, the performance of their teams, and the performance of their overall organization.

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