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KNOWLEDGE SHARING, COMMUNITIES OF PRACTICE, AND LEARNING ASSET INTEGRATION— *DAU'S MAJOR INITIATIVES*

JOHN HICKOK

The concepts of Knowledge Management (KM) and knowledge communities have matured over the past decade and are being recognized as major enablers for personal learning and job performance in achieving organizational business objectives. As a result, industry and government organizations are investing in KM, Organizational Learning (OL), and other development programs to help employees tap into knowledge resources. This article discusses the impact of KM on personal learning, job performance, and organizational learning. What follows is an overview of Knowledge Sharing through the eyes of the Defense Acquisition University, along with some new initiatives called Learning Asset Integration and Workflow Learning, which will be major support systems for the Acquisition, Technology, and Logistics workforce.

Knowledge comprises a highly significant part of the assets of any organization. The utilization and continuous creation of knowledge are the most important managerial challenges organizations face today. While the technology for collecting, storing, and accessing information continues to grow exponentially, the ability to effectively and efficiently use this information to enhance job performance, as well as deliver quality products and services remains elusive. The social challenge of fostering human interaction and Knowledge Sharing (KS) to encourage thinking rather than sophisticated copying remains a constant.

The *management challenge* is to create an environment that truly values KS. The *personal challenge*—often downplayed—is to be open to the ideas of others, willing

Balancing Career Development with Performance Learning



FIGURE 1.

AT&L PERFORMANCE LEARNING GOAL—CREATING AN ENVIRONMENT WHERE WE SUPPORT THE AT&L WORKFORCE BEFORE, DURING, AND AFTER TRAINING EVENTS—LEARNING AT THE POINT OF NEED

to share ideas, and maintain a thirst for new knowledge. Knowledge in organizations manifests itself in one of two forms—*explicit* and *tacit*. Explicit knowledge can be easily articulated, captured, and transferred. Tacit knowledge is intangible and not easily transferable, and therein lies the problem. How do we share and transfer the tacit knowledge that resides in an organization?

Moreover, it is all too apparent that information alone is of little value. To be truly useful, the information must have context—applied through individuals who bring their tacit knowledge, skills, and unique experiences to a situation to better understand and affect a desired outcome. Tapping into critical pieces of information and being able to interface with other knowledge workers who can add context is at the heart of the Defense Acquisition University's (DAU's) Knowledge Management (KM) strategy.

Technologies of various kinds seem to further facilitate these transformations. However, it is becoming increasingly clear that the presence of technology without a context is irrelevant. In a constantly changing knowledge economy, the only sustainable competitive advantage is the knowledge capital of an enterprise. This knowledge capital lies in the minds of the enterprise's employees in either explicit or tacit form, waiting to be reaped. We recognize the strategic importance of enterprise knowledge assets and are committed to fostering and facilitating the creation of a KS environment.

The traditional definition of KM refers to the process of creating, capturing, organizing, transferring, and using knowledge to enhance organizational performance. Knowledge management must be a persistent agent of both business and information technology strategic planning. We believe creating the right environment to foster sharing and collaboration is a critical component of KM. That environment must stress the importance of leadership, people, culture, process, learning, and enabling technology. The DAU must focus on the many disciplines of KM—our major challenge and goal is to facilitate KS.

WHY IS KNOWLEDGE SHARING AN AT&L IMPERATIVE?

Political, economic, and social forces in conjunction with rapid technological advancements are shaping today's organizational operating environment. These forces have accelerated the speed and frequency of change. This new reality requires the community to be innovative, adaptable, and poised to take advantage of a fast-changing environment. Coupled with the increasing lack of time and attention workers have available to commit to traditional competency-based learning, there is a deep recognition that learning methods must keep pace with the needs and expectations of the community.

***Knowledge is experience.
Everything else is just information.
—Albert Einstein***

One of the common knowledge gaps in our community is the lack of capturing experiential learning for key business practices. Thus, we are often faced with the frustration of *reinventing the wheel* when working with these practices. There is no formalized process for capturing and documenting *what was learned* so that this knowledge can serve as an input into the next project or query.

Another gap, which we are addressing more rapidly, is the ability to locate expertise quickly. This often occurs when one needs information quickly and asks these questions. Who is the expert in this area? Who can I talk with to get that information?

The third gap is the integration of KS so that content does not manually arrive after the point of need, but rather when the work suggests it. Addressing these issues and reducing knowledge gaps are major keys to performance and effectiveness. Subsequently, the Defense Acquisition University (DAU) is broadening its support to the community by creating a continuous-presence service environment, and developing the necessary resources and infrastructure for self-service, customized/personalized learning, and KS. The ability for the Department of Defense (DoD) acquisition community to adapt to change, act rapidly, be innovative, and continuously improve upon practices requires the infrastructure and the cultural atmosphere that facilitates these attributes. The attention

DAU is focusing on modularizing and integrating learning assets (see Learning Asset Integration), and cultivating a KS environment sets the stage for a more relevant and valuable learning experience for the community, tied to real-world issues.

To ensure that DAU is effective in vying for the time and attention of the community, the learning focus must be targeted, personalized, and relevant to the worker. The acquisition worker is looking for the DAU experience to provide relevant *know-how* with the kind of context necessary to make faster, better-informed decisions and leverage the vast amount of knowledge that DAU—and DoD—embodies as a whole in documents, people, and processes.

We believe that KS fundamentally anchors organizational productivity for both DAU and the Acquisition, Technology, and Logistics (AT&L) community. From that foundation, all of the goals noted above become derivative benefits as our methods and practices are applied to connect people, processes, and information. Based on our experience with communities of practice, we have also realized that value creation in these KS communities is a continuous cycle.

***The DAU provides the AT&L community with
the tools and resources it needs
to improve job performance 24/7.***

We have also found that this effect is heightened when members cross-pollinate by participating in multiple communities (e.g., program management and logistics).

The DAU's primary strategy is to capture and integrate learning assets, as well as cultivate KS environments that allow for the context building and interaction essential to move beyond piles of data and into the realm of synthesis, action, and continuous learning. A clear objective is to leverage the collective intellect of the organization to advance organizational learning and community innovation.

The DAU must take advantage of both explicit (documented) and tacit (in-our-heads) knowledge so each individual in the AT&L community can quickly draw on the total body of knowledge, within a minimum number of clicks. This concept is supported by the notion of evolving to a *learner practitioner—learn as you work, work as you learn* environment; analogous to the operational *train as you fight, fight as you train*.

The DAU continues to accomplish this objective by blurring the line between the community and the schoolhouse—encouraging the belief that learning occurs before, during, and after any competency-based learning intervention. The DAU provides the AT&L community with the tools and resources it needs to improve job performance 24/7. The DAU is integrating learning assets and maintaining a continuous presence to the AT&L community via online resources like the AT&L Knowledge Sharing System (AKSS), Acquisition Community Connection (ACC), the Acker Library, the Virtual Campus, and the Continuous Learning Center (CLC).

The two major knowledge repositories and access systems developed for DoD by DAU are the AKSS and ACC systems. These two systems have different functions, but complement each other to provide the AT&L community with the whole package of explicit and tacit knowledge.

The AKSS is the central repository and gateway for acquisition policy and reference materials, and it replaced and improved upon the legacy Defense Acquisition Deskbook system by employing a strategy that leverages valued sources of explicit knowledge developed and constantly maintained by Office of the Secretary of Defense (OSD), the military services, and agencies. The AKSS includes comprehensive libraries of policy/reference documents, AT&L web sites, guidebooks, handbooks, software tools, glossaries/acronyms, and online knowledge communities. A high-end search engine allows users to choose among the various libraries and search within results to find knowledge quickly. The AKSS also includes the legacy *Ask a Professor* function and database of frequently asked questions and a professor's answers (see Figure 2).

The ACC is the collaborative tool for the AT&L community, where members can contribute local knowledge and interact with other practitioners. The ACC provides *discretionary* practices, whereas the AKSS's major function is to provide *mandatory*

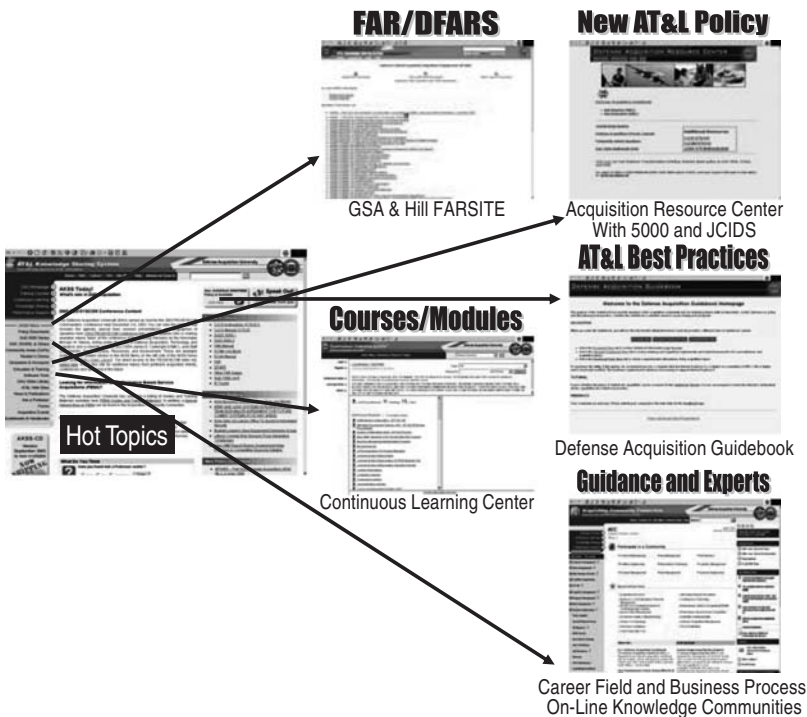


FIGURE 2. DoD AT&L KNOWLEDGE SHARING SYSTEM GATEWAY TO PRODUCTS, PROCESSES, TOOLS, AND EXPERTS

policy and references. The ACC's goal is to connect practitioners with *know-how* across all DoD organizations and industry, conveying and capturing tacit knowledge—the knowledge in people's heads gained from experience. The ACC is still in its early stages, but it promises to be a significant force in stimulating collaborative thought among acquisition practitioners and promoting more collaborative ways of doing business. It is also proving to be a major facilitator for joint, OSD, Service, and agency integration and sharing, thus minimizing costly knowledge development and duplication in *stovepipes*. Presently the ACC houses and facilitates 25 major knowledge communities (for public access) and over 250 private workspaces. Many of the private workspaces are public communities in development. See more on DAU communities of practice and community practice development (see Figure 3).

WHAT KNOWLEDGE SHARING MEANS TO DAU

Utilizing online resources such as ACC as a means to facilitating knowledge sharing within the acquisition community can result in:

- Facilitating AKSS across DoD.
- Automating discovery, collection, and adoption of best practices.
- Managing the idea-vetting process (i.e., innovation).
- Dealing with information overload—*finding vs. searching*.

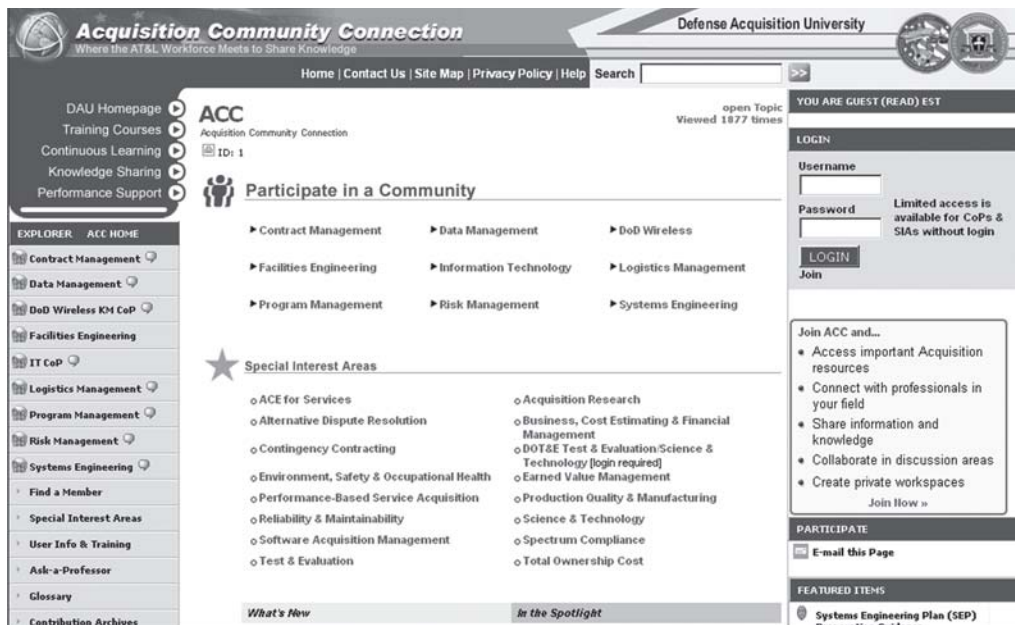


FIGURE 3. ACQUISITION COMMUNITY CONNECTION WEB PAGE

- Making processes and knowledge workers more efficient, more effective, and better problem solvers.
- Automating expertise location and sharing.
- Improving customer satisfaction.
- Improving product development.
- Enhancing research and development.
- Capturing tacit information held by knowledge workers, enabling others to leverage it.
- Promoting better collaboration and information sharing.
- Fostering an environment of collaboration and knowledge transfer that provides fertile ground for business process innovation.

TOP 10 CONSENSUS BEST PRACTICES FOR IMPLEMENTING KNOWLEDGE MANAGEMENT INITIATIVES

Amongst acquisition professionals there is a consensus of best practices for the implementation and management of KM initiatives (in rank). The top 10 consensus best practices are listed below in rank order of importance to success:

1. Prototype and start small (versus investing in a large, *one-size-fits-all* system).
2. Start with believers (i.e., people who are interested in sharing and leveraging knowledge around a common goal or job function).
3. Plan for cultural change (as well as information structure and technology change).
4. Leadership must provide support, resources, and a clear mandate that encourage and foster KS.
5. Start at the end-users' level of understanding and not how others think end-users should use knowledge.
6. Involve end-users from start to finish, from design to implementation to continuous improvement.
7. Assign a single point of responsibility for system maintenance.

8. Use open-technology architecture that allows easy cross-community access to and transfer of information.
9. Knowledge should only need to be captured once when first entered. This will allow real-time visibility and avoid additional work of reentering for the user.
10. Retain the best elements of existing systems.

LEARNING ASSET INTEGRATION

The DAU provides career-long professional support through the products and services offered in the AT&L Performance Learning Model (PLM)—24/7 learning assets for the classroom, the workplace, and most important...closely linked to achieving senior leadership goals. A major near-term DAU strategy is to integrate and leverage our learning assets generated by the elements of the PLM, maximizing the value of all assets to the AT&L knowledge worker. A major goal within this strategy is to be a continuous and



FIGURE 4. AT&L PERFORMANCE LEARNING MODEL

desired presence to our community by enabling its members to reach back to DAU learning assets that are continuously updated to maintain accuracy and context.

WHAT ARE LEARNING ASSETS?

Learning assets range from small objects, like a graphic representation of an acquisition process, to a large online career field community of practice and its body of knowledge. Learning assets cover the full spectrum of internal and external sources:

- Learning objects and courses developed by DAU's authoring tools.
- Classroom course presentations and information artifacts.
- Continuous learning modules/courses.
- Rapid deployment training materials.
- Targeted training materials.
- Performance support materials used in consulting support.
- DAU and DoD guidebooks and handbooks.
- Policy and reference documents.
- Case studies, best practices, lessons learned, automated templates, and tools.
- Knowledge communities, subtopic areas, and contributed objects.
- Student-developed studies, reports, and lessons learned.
- Faculty business cards with identified areas of expertise.
- Assets in the Advanced Distributed Learning (ADL) digital repositories of DoD-sharable learning objects.

WHAT IS LEARNING ASSET INTEGRATION AND WHY IS IT OF VALUE TO THE AT&L COMMUNITY?

Learning Asset Integration (LAI) is the capturing, organizing, life-cycle management, and open access to a broad spectrum of learning assets in one or more central digital repositories. The DAU will integrate its learning assets to help AT&L practitioners:

- Leverage and maximize the value of all PLM products and services.
- Provide the most accurate and current knowledge available in all PLM products and services.
- Enrich the activities and content in courses and course modules.
- Minimize the cost of development and maintenance through asset reuse.
- Develop career qualifications and competencies.
- Maintain professional currency.
- Do their jobs more efficiently in real time.
- Make smart business decisions.
- Support DAU's Learning Vision and support new competency-based training.

WHAT IS THE ROLE OF DAU FACULTY AND STAFF?

The heart of integration resides with the learning asset owners who will help develop, maintain, and update DAU-controlled learning assets described above. Contractor personnel will support faculty and staff with the different tools involved, especially with the learning asset repository, but faculty Subject Matter Experts (SMEs) are critical to ensuring accuracy, quality, relevance, and timeliness. Since so many different access systems and the entire AT&L community will be counting on these assets, faculty and staff will be given time for training on the processes and tools involved to ensure the repository of learning assets is complete, stable, and up-to-date.

WHAT ROLE DOES TECHNOLOGY PLAY?

The DAU is planning the development of a central Learning Asset Digital Repository (LEADR) that will serve as a central database of learning assets that are principally developed and managed by DAU, but also house other DoD assets that DAU is specifically responsible for managing. The repository will form the principal knowledge base of the AKSS. Other systems, like the ACC and its knowledge communities, DAU's Internet-accessible home page, DAU's Intranet, and the Acker Library, will draw heavily upon the various learning assets in the repository.

The AT&L community will be able to access these knowledge objects anytime and anywhere in support of a classroom course, as job aids at work, or in support of continuous-learning activities. The reusable knowledge objects in the digital repository will also be accessible through other mechanisms, such as integrated performance support tools, formal learning modules, and communities of practice (CoPs).

Although the people factor and commitment by DAU faculty and staff will be the major element in a successful learning asset integration initiative, technology plays a major role in facilitating the efficient capturing, organizing, managing, and broad but controlled access to learning assets.

- **Learning Content Management System (LCMS).** The DAU's new LCMS will play a major role in developing content and learning assets, in addition to providing a user-friendly learning asset repository used to organize, capture, describe, and manage DAU's learning assets throughout their life cycle. The asset development tools will allow faculty and staff to be able to fully manage assets without relying on technical support personnel. Advanced technology in the form of automated templates and process wizards will help support this requirement.
- **DAU Web Sites.** The DAU's various Web sites support about two million page views per day, arguably the busiest educational site on the Web. Existing and new integrated tools (content contribution in CoPs, discussion groups, search, online group systems, voice-over IP, instant messaging, etc.) will be the access windows and collaboration tools for the AT&L community. Advanced technology will be used to *personalize* support to the community and minimize the time necessary to find needed knowledge and expertise.

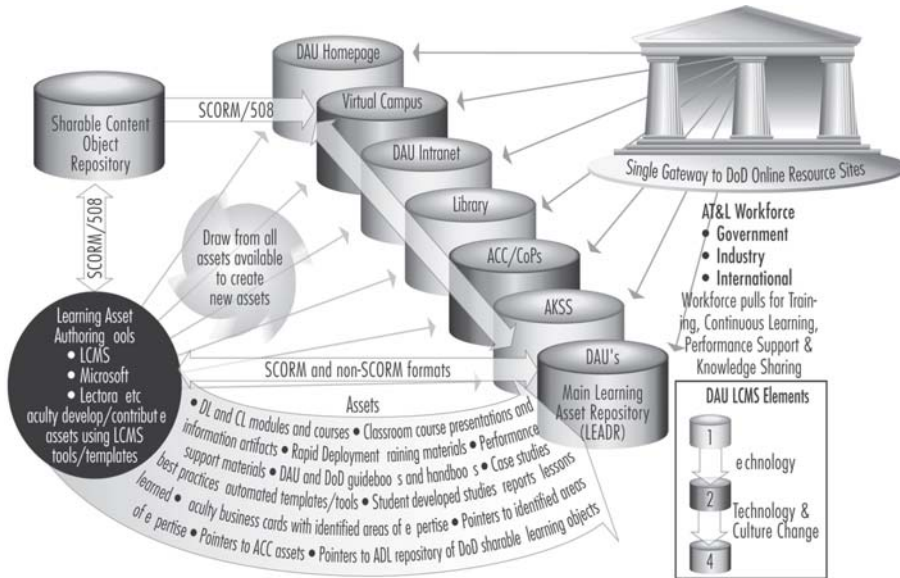


FIGURE 5. NEXT BIG INITIATIVE

Learning Asset Integration through a virtual repository(ies) of DAU learning assets—leveraging learning assets for curricula development and workforce job support (public access to DAU learning assets)

One example of how LAI will leverage assets and improve efficiency and effectiveness in classroom-based courses, course managers will launch their course materials from the DAU learning asset repository (see Figure 5). Many details are available through other assets in the repository such as policy and reference documents, tutorials, continuous learning modules, DAU guidebooks, handbooks, best practices, lessons learned, product development tools, and online discussions on a specific topic/issue, etc. If an appropriate online knowledge community exists—in the ACC system or a Service/Defense Agency community—students are made aware of this community and invited to join or participate in collaborative activities.

Alumni and currently registered students can reach back for job performance support to access formal course materials and other assets in the repository through many different web site channels.

Students will be able to develop assigned research papers using the extensive DAU online resources available to them and their knowledge communities. Appropriate student-generated research papers will be later captured in the learning asset repository by the course manager and contributed to the knowledge community for sharing between other students or community members at large. Students will use collaborative Web workspaces to work specific learning activity assignments, mine appropriate knowledge, capture threaded discussions, analyze case studies, and prepare presentations for class discussions.

When a new course is being considered for development, the learning asset repository is searched by the Course Development Team for previously developed course content, either entire courses or parts of courses (objects). A search of all learning assets is made to determine what supplemental assets are available that would preclude developing new content.

After course completion, minor changes to course materials are made by course managers through the LCMS authoring tools, and updated courses or modules are stored in the learning asset digital repository. Alumni and currently registered students can reach back for job performance support to access formal course materials and other assets in the repository through many different web site channels.

Countless scenarios exist where LAI *pays off* for other forms of professional development training, continuous learning, rapid deployment training, targeted training, performance support consulting, personalized learning, and organizational learning.

- Task and work support embedded in real-time workflow.
- Real-time collaboration with people and systems.
- Learning and performance nodes modeled with business process modeling tools.
- Short, granular bursts of learning and performance support embedded at specific nodes of a business process.
- Dynamic generation of on-the-fly tasks as work evolves.
- Continuous performance improvement and automated performance measurement.
- Personalized delivery, management, and routing of tasks and task support.



Workflow Learning will reduce the time needed for tasks and business processes, thereby increasing productivity and cutting costs. Embedding learning into the workflow can reduce the time needed for both training and informal learning. Workflow learning applications integrate with enterprise applications—for example, Human Capital Management (HCM) systems—to link performance with organizational data, business intelligence, and productivity metrics. Often, the combination of these applications takes the form of a personalized portal or dashboard—one computer screen that will give AT&L learners access to various application functions. Instead of every learner using the same set of software, the functions offered will be job-based or role-based. There is no learning transfer—learning will take place as a result of a learner interacting with the DAU-based system. Work and learning will be simultaneous. By leveraging workflow learning and Web Services, DAU learners will increasingly be unleashed from the classroom and even the desktop, as learning becomes available through a variety of on-the-job *informal* processes, such as mobile and handheld devices that account for 90 percent of how people really learn in the enterprise.

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The first workflow learning tool that DAU will develop in 2005 will provide program managers and logistics managers with step-by-step processes and readily available resources to support the design and implementation of Performance-Based Logistics (PBL) strategies. The tool will be developed in the ACC community of practice *Simplify* application and will greatly leverage relevant resources and expertise in the Logistics CoPs, continuous learning modules, and PBL course assets.



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