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# A COMPARATIVE ASSESSMENT OF KNOWLEDGE MANAGEMENT EDUCATION ACROSS THE UNITED STATES DEPARTMENT OF DEFENSE

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## ABSTRACT

*The National Military Strategy (2004), the Capstone Concept for Joint Operations (2005), and the Quadrennial Defense Review (2006) specifically highlight a new focus by the Department of Defense (DoD) on knowledge in operations as opposed to traditional weapons platforms. As such, each of the military services have put into place KM programs to varying degrees. According to Stankosky's (2005) four pillars of KM framework, managing an organization's knowledge assets can be most effectively accomplished by addressing four key elements--leadership, organization, technology, and learning—the "learning" pillar including KM education. Given that research on KM education is sparse (Ruth et al, 2000) and that organizations that do not address KM education are more likely to fail with KM efforts (Koenig, 2004), this multiple-case study provides a first look at KM education across the DoD. The preliminary results indicate that nature and importance of programs vary across the services, and, despite some leadership support, the resources needed to execute them are not always available.*

## Keywords

knowledge management, knowledge management education, Department of Defense, multiple-case study

## INTRODUCTION

The U.S. military services, like other organizations, recognize that knowledge is a critical resource. The National Military Strategy (2004), the Capstone Concept for Joint Operations (2005), and the Quadrennial Defense Review (2006) all highlight a new focus by the Department of Defense (DoD) on knowledge in operations as opposed to traditional weapons platforms. Each of the military services have put into place KM programs to varying degrees. According to Stankosky's (2005) four pillars of KM framework, managing an organization's knowledge assets can be most effectively accomplished by addressing four key elements--leadership, organization, technology, and learning. The "learning" pillar, which can include KM education, provided the initial springboard for this research. Furthermore it has been recognized that there is a sparsity of research concerning KM education (Ruth et al, 2000). Given that organizations that do not adequately address KM education are more likely to fail with KM efforts (Koenig, 2004), this multiple-case study provides a first look at KM education with the Army, Navy, Marine Corps, and Air Force. Informed by principles offered by Light and Cox (2001) and Novak (1977), the guiding research question was:

How are the military services of the DoD addressing KM education?

In order to evaluate this primary research question, following investigative questions were examined within the context of each military service. *(Additional investigative questions were examined, but due to space limitations will not be addressed here).*

What is the perceived importance of KM education?

What is the nature of the programs in place to educate for KM?

What issues have been encountered while trying to develop KM education programs?

## LITERATURE REVIEW

Among the many strategy and guidance documents, the National Military Strategy (2004), the Capstone Concept for Joint Operations (2005), and the Quadrennial Defense Review (2006) each highlight a new focus by the Department of Defense (DoD) on knowledge in operations as opposed to traditional weapons platforms. Among other efforts, each of the military

services have put into place KM programs to begin to specifically address the “knowledge” emphasis. In order to engage in knowledge management, and subsequently to educate for it, organizations, including the services, must first understand the fundamental processes that comprise it. Davenport and Prusak (2000), Alavi and Leidner (2001), Stankosky (2005), and others have identified the key processes of knowledge management in varying ways. Due to wide acceptance, this research uses Alavi and Leidner’s (2001) KM processes of knowledge creation, knowledge storage and retrieval, knowledge transfer, and knowledge application as the foundation for defining KM. Davenport and Prusak (2000), Bassi (1999), and Choi (2000) identify education as a crucial component of KM success. Furthermore, McDermott et al (1999) elevated the importance of KM education by asserting that it would determine the ultimate success or failure of KM initiatives. KPMG Consulting (2000) published compelling statistical evidence for this assertion in a report on the status of KM system implementation in more than 400 organizations which found that inadequate user training and education was the source of 53% of all failed KM systems. It stands to reason, if the U.S. military services are to have robust and effective KM programs, that KM education should be at least one key element of focus.

## **METHODOLOGY**

This research used a case study approach and design (Yin, 2003) as it is considered appropriate where few studies have been conducted (Benbasat et al, 1987). Furthermore, a multiple case study design was chosen as it could more easily illustrate complementary and contrasting (Yin 2003) KM education approaches. Each service was designated an individual case with the Navy and Marine Corps combined as a single case as the Marine Corps KM program is under the authority of the Navy CIO office. To allow for general comparisons between cases, service “KM education programs” was chosen to be the unit of analysis. Data collection was accomplished by conducting interviews (14 total) with members of the organizations responsible for each of the services KM programs, collecting documents addressing KM education published by each service, and reviewing each service’s web portals for pertinent data. As Yin (2003) states, using convergent lines of inquiry from multiple sources provides data triangulation that can be used to convincingly and accurately answer research questions. More specifically, interviews for the Air Force were conducted with members of the Warfighter Integration office, the AF CIO’s KM office, and the Air Force Materiel Command’s Center of Excellence for KM. Interviews for the Army and the Navy were conducted with members of each service’s respective CIO’s KM office. Documents pertaining to KM education published by each service were also used. Finally, data was collected from each service’s web-based “KM” portal--Air Force Knowledge Now, Army Knowledge Online, and Navy Knowledge Online. All data collected was entered into a case study database to support analysis. Pattern matching was used as the analysis method. In order to address design quality, construct validity, external validity, and reliability all were addressed in accordance with Yin (2003). Limitations of the study include the limited number of interviews, the varying conceptions KM concepts and definitions held by the interviewees, and the finite number of cases available that did not allow for proper literal replication

## **RESULTS**

Data pertaining to each of the investigative questions will be presented in the paragraphs that follow. Service-specific findings for each will be highlighted where possible.

### **What is the perceived importance of KM education?**

#### *Air Force*

In a 2004 memorandum to the Air Force Materiel Command (AFMC) Vice Commander, the Air Force CIO (SAF/XC) delegated responsibility for service-wide Air Force KM efforts to the AFMC Center of Excellence for Knowledge Management. This Center of Excellence is often referred to as Air Force Knowledge Now (AFKN). AFKN (via a KM system or collaboration tool also called AFKN) provides users with the resources to create and build individualized communities of practice (CoP). The requirement to educate and train users on the capabilities and potential of AFKN CoPs has grown with the tool’s popularity and use. However, while AFKN personnel find KM education crucial to the collaboration tool’s success, they characterized users’ perceived importance of KM education as minimal. AFKN personnel related in interviews that the majority of users were only interested in learning how to use AFKN and were not interested in learning about general KM principles. SAF/XC personnel, on the other hand, related in interviews that the importance of KM education was understood, and that they were hoping to develop courses to be added to basic training and professional school education curricula at some point in the future.

### Army

The Army has established a service-wide KM effort it calls Army Knowledge Management (AKM). While AKM serves only as a guide for Army KM efforts, the purpose of AKM is to develop a “network-centric, knowledge-based force.” This KM effort was initiated in 2001 by the Secretary and Chief of Staff of the Army with implementation authority delegated to the directly-subordinate CIO/G-6 office. Additional AKM Guidance Memorandums published by the Secretary and Chief of Staff provide continued guidance and direction for AKM efforts. AKM has five stated goals: 1) adopt governance and cultural changes to become a knowledge-based organization; 2) integrate KM and best business practices in Army processes; 3) manage the infostructure at the enterprise level; 4) scale Army Knowledge On-line (AKO) as the enterprise portal; and, 5) harness human capital for the knowledge organization. The Army’s KM education efforts are led by the CIO/G-6’s KM and Human Capital divisions. The KM division published an Army-wide implementation guide in 2003 with KM initiatives and completion deadlines required in order to fulfill each AKM goal.

### Navy/Marine Corps

In October 2005, the Department of the Navy (DON) CIO published a memorandum to communicate the Navy’s KM strategy. This memorandum established a KM vision “to create, capture, share, and reuse knowledge to enable effective and agile decision-making, increase the efficiency of task accomplishment, and improve mission effectiveness.” To realize this vision, a four-fold strategy was developed to: 1) broaden and expand Departmental awareness that KM concepts, when applied to the operational and business processes of any command, will enable significant improvements in mission accomplishment; 2) encourage commands to implement KM programs, structure, pilots, and methodologies as part of process improvement efforts; 3) assist commands with KM experience to share their experiences, lessons learned, and results to foster collaboration, enable shortened learning cycles, and assist other efforts; and, 4) assist commands embarking on new implementations to build upon the experiences and resources of others. This memorandum further clarified seven focus areas in order to effectively implement this strategy. These focus areas include KM advocacy, training and education, culture change, CoPs, KM collaboration, KM tools, and KM integration with related initiatives. The memorandum concludes by directing commanders to use KM concepts and tools to improve business and warfighting effectiveness, share KM best practices and resources, and continue to champion KM as a critical enabler of force transformation.

### What is the nature of the programs in place to educate for KM?

#### Air Force

The AFMC Center of Excellence (or AFKN) in-house experts tailor educational sessions for customers as requested. After educational sessions are finished, these personnel help establish CoPs for customers. These educational sessions occur on-site when customers desire to know more about AFKN. The sessions range from 1-2 hour overviews with live demonstrations of the AFKN tool to 1-2 day strategic immersion events. Strategic immersion events include additional, in-depth instruction on concepts such as CoP knowledge owner roles and the dynamics of how communities interact. To this point, KM education has been customer-specific, but AFKN personnel related in interviews that they are attempting to standardize KM education sessions and materials. Additional KM education products are offered in the IT E-Learning section of the Air Force Portal. These courses were contracted for by the AF CIO’s office. Ten courses mention “knowledge management” in the course description and/or course objectives.

#### Army

The AKM implementation guide lists specific initiatives to be accomplished in order to achieve the Army’s five stated AKM goals. These initiatives call for:

- Planning, recruitment, retention, education and development of the command, control, communications, computers, and information management (C4IM) workforce to meet the technical and managerial needs of transforming the Army into a network-centric, knowledge-based force.
- Institutionalizing knowledge sharing and knowledge management via the Army’s infostructure.
- Transforming processes to embed knowledge management into Army operations

One method through which the Army fulfills these initiatives is through the Army Knowledge (AK) Leaders program. Each year the Army recruits top business and IT management college graduates for two years of intensive academic training, hands-on experience, and mentoring in IT management and leadership. A course on KM is part of the Army Knowledge Leaders program to provide participants with an understanding of KM and its use in the Army.

The Army CIO/G-6 also office conducts programs to educate and establish a baseline understanding among the Army Staff, functional communities, and the operational Army on KM. The CIO/G-6 office has subsequently created an instructional DVD by using the previously-mentioned course objectives in order to educate more members on KM. This “Foundations of Army Knowledge Management” DVD is divided into eight learning modules designed to build KM awareness.

Finally, the Army is creating Battle Command Knowledge Cells staffed with Knowledge Management Officers (KMO) to facilitate KM within battle commands. To increase effectiveness, the Army has a draft Standard Operation Procedures (SOP) document to assist KMOs in establishing and cultivating KM programs. This draft document includes instruction on implementing a KM program in a unit, worksheets to assist KMOs with knowledge assessments, KMO lessons learned, fellow KMO contact information, and KM tool user guides. Army Field Manual Instruction 6-01.1 also provides many of these same resources and indicates that a training and education program for Battle Command Knowledge Cell personnel is being developed.

### *Navy*

KM in the Navy is focused on its two main postures: in-garrison and at sea. KM education for in-garrison applications is conducted primarily through DON CIO KM education sessions. DON CIO finds KM education as a critical component of the Navy’s KM program and has absorbed all costs for the DON CIO KM education sessions. These multi-day training sessions are conducted by DON CIO personnel upon request and focus on creating “awareness and understanding of the full spectrum of KM and how it can impact performance,” within the context of enterprise/commands, communities, and individuals.

KM education for the Navy’s at-sea posture is primarily designed to support carrier strike group Knowledge Officers (KO). Tactical Training Group Pacific (TTGP) conducts KM education sessions for KOs getting ready to go to sea, as well as, for carrier strike group admirals and staffs. TTGP sessions were developed by in-house personnel to ensure KOs can effectively fulfill their duties and to ensure carrier strike group leadership understands and encourages KM in support of KOs.

Another at-sea KM education product is available through the Naval Postgraduate School (NPS). NPS KM courses include Knowledge Superiority and its prerequisite, Defense Knowledge and Information Management. Both courses are available to all Navy personnel on-line and are available during regular schooling periods without any face-to-face instructional sessions.

A final KM education product is available via Navy Knowledge On-Line (NKO). While KM education courses are mandatory for Information Professionals, they are available to all Navy personnel. The NKO continuing educational unit course, “Knowledge Distribution, Knowledge Flow, and Organizational Performance” is an on-line, self-paced course.

### **What issues have been encountered while trying to develop KM education programs?**

#### *Air Force*

Senior leadership support for Air Force KM and AFKN remains a challenge. Interviews attribute this challenge to a general lack of KM understanding among senior leaders with many mistaking KM for information management. This lack of awareness and support has translated into difficulty in procuring resources for continued, and expanded, KM education development. Lack of leadership support has also translated in lack of funding support. The AFMC KM Center of Excellence personnel, for instance, have had to field the AFKN collaboration tool/system with limited funding and with in-house development. Where there has been mention, by KM proponents in the CIO’s office, regarding the inclusion of KM education into professional military education (PME) courses as a way to expand KM education throughout the service, there has been a great deal of “push-back” as such PME courses are fixed in length and to add KM education would require the deletion of existing material.

#### *Army*

Army leadership and culture is extremely supportive of KM and KM education. Despite the many successes achieved, procuring funding to create and maintain KM education products and offerings, given the many other competing resource demands, continues to be a challenge.

Navy

One of the DON CIO’s top goals in providing KM education to service members has been incorporating KM education into PME courses. Similar to the Air Force, PME courses are fixed in length and adding KM education material requires deleting other material. DON CIO personnel stated they were working to justify the benefits of adding KM education to PME courses and hope to make this addition in the next few years.

As with the other services, the Tactical Training Group Pacific (TTGP) KM education efforts are impacted by funding support issues. One other unique issue concerns the ability to channel KOs through TTGP KM educational sessions before they head to sea. TTGP personnel related in interviews that providing KM education to KOs before going to sea has contributed to improved overall KO effectiveness. A summary of responses to the investigative questions is offered in Table 1 below.

	Air Force	Army	Navy
<b>Perceived Importance</b>	- Perceived important only to KM practitioners	-Perceived important by service leaders and KM practitioners	-Perceived important by service leaders and KM practitioners
<b>Nature of Programs</b>	- AFKN collaboration tool training - IT E-Learning courses	- Army Knowledge Leaders “Foundations” DVD/on-line - CIO/G-6 sessions - KM Officer Standard Operating Procedures document	- CIO-led sessions -Tactical Training Group Pacific sessions - Naval Postgraduate School courses - Navy Knowledge On-line courses
<b>Program Development Issues</b>	-Senior leadership support -Adding KM to Professional Military Education courses -Funding	- Funding	- Adding KM to Professional Military Education courses - Assignment rotations - Funding

**Table 1 – Summary of DoD KM Education Findings**

**DISCUSSION**

The data indicates that DoD services place varying degrees of importance on, and undertake different approaches to, KM education. The Army and Navy have demonstrated the greatest commitment from senior management levels—through strategy and action—to KM education and, subsequently, appear to have more mature efforts. The Army and Navy CIOs have established KM education goals and program direction in service-wide directives, allowing the CIOs to “push” KM and KM education throughout their service. The Army has provided service-wide KM education goals within the AKM strategy, while the Navy has allowed its individual KM education programs to establish their own goals.

This has not been the approach taken by the Air Force leadership, who has delegated primary responsibility for KM to an organization situated hierarchically in a subordinate command and activity unrelated to the CIO function. Overall, the Air Force appears to have undertaken a “grassroots” approach to KM education. Air Force personnel are limited to “pulling” KM education from on-line KM education products and AFKN tool training sessions. Air Force KM education products cater primarily everyday KM practitioners.

Also for the Army and Navy, overarching service-wide goals backed by strong senior leadership support appear to have resulted in greater resource (money and time) commitment to KM education. The broad range of Army and Navy KM education offerings allow the services to provide KM education to personnel with varying degrees of understanding and ability, thereby increasing the total number of personnel that are educated about KM.

### IMPLICATIONS FOR PRACTICE AND THEORY

The implications of this research with regard to practice seem to indicate that there are many ways to approach KM education, much of that approach having to do with mission/business goals, leadership support, and resource availability. What is abundantly clear, however, is that with strong leadership support some resource (time and money) issues can be mitigated. Also, ironically, it appears the services could benefit from some “KM with regard to KM.” In other words, some collaboration amongst the services to provide, at least, general KM education could not only facilitate consistency in “message and approach”, but also resource savings. The implications for theory involve an addition to the sparsity of research concerning KM education--this research being the first look at KM education in the military services. More specifically, it adds support to the existing research that identifies the importance of KM education with relation to KM success, and illustrates how the resource and leadership support barriers to execution parallel those encountered in developing KM programs in general.

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