KNOWLEDGE MANAGEMENT: COMMUNITIES OF PRACTICE AS KEY ASPECTS IN FUTURE US ARMY LEADER DEVELOPMENT

Major Will B. Freds

JCSP 37

Master of Defence Studies

PCEMI 37

Maîtrise en études de la défense

Canada

CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES

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By Major Will B. Freds

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ABSTRACT

The US Army is on the right path in its pursuit of a revitalized leader development strategy and a comprehensive knowledge management program. These two programs are born from the Army's Capstone Concept, an initiative that defines the way that the Army wants to positively emerge from the decade of conflict in the Global War on Terror, harnessing the many lessons that it has learned. Through the publishing of the Army Learning Concept for 2015 and the Army Leader Development Strategy for a 21st Century Army (ALDS), the Army is setting the stage for effective leader development to effectively handle the dynamic situations that the future operating environment will present. Through the vast resources that the Army has committed to its newly developed Centers of Excellence and the many communities of practice online platforms, the Army is positioning itself to be an effective learning organization. This paper reviews the ALDS and the goals it sets forth for leader development and compares the current leader development framework with those goals in order to identify gaps which it must address. It then looks at the communities of practice that the Army has created and shows how they can provide a platform to fill the gaps between current leader development programs and the goals set forth by the ALDS and the Army's top leadership. This paper utilizes academic research and the author's experience to analyze these communities of practice and link their functions to the Army's goals for effective leader development.

This paper argues that within the Army's leader development transition, knowledge management, and specifically online communities of practice, can play an important role in achieving many of the desired effects that its Senior Leaders have identified in the ALDS and ALC. The current leader development model is insufficient to thoroughly accomplish the goals set forth in the ALDS and ALC. The community of practice platforms that the Army has created

to facilitate knowledge management and to better connect its people will provide important capabilities that can effectively harness the knowledge of its experienced leaders and provide them with a critical knowledge transfer platform. This will achieve the desired goal of aggregating the Army's acquired knowledge for the improvement of Army operations. These communities of practice will allow these leaders to effectively explore practical self-development and will facilitate lifelong learning. They will accomplish the Chief of Staff of the Army's directive for senior leaders to share their lessons learned from past experiences. This paper will utilize academic and defense research to argue that knowledge management platforms should be implemented as a part of the Army's leader development strategy.

CHAPTER 1: INTRODUCTION

The US Army leadership, beginning with the Commander in Chief, acknowledges that our armed forces will most likely continue to have to confront and defeat both conventional and unconventional threats in the full spectrum of operations. Gone are the days of a military manned, equipped and trained to primarily defeat conventional threats. The US military is re-orienting itself to dominate in this emerging environment by tailoring its force structure, rewriting its doctrine and refocusing its leader development program.[1] The Army has begun to improve its agility and adaptability by decentralizing its force structure (moving some assets traditionally held at the higher Division level down to Brigades), and by focusing on empowering leaders at lower levels with greater authority for decision-making in tactical situations. The Army leadership notes that the latter has been necessary as operations become more complex and increasingly include a variety of actors and influencing factors vital to mission success.[2] This reality of increased responsibility of Army leadership requires that the Army continue to improve its strategy to develop its leaders to meet the nation's future challenges and win its wars.

The Army has placed significant importance on the quality of its leaders at all levels. Developing these leaders to effectively accomplish the Army's current and future missions has always been a priority in the US Army. Army documents go so far as to state that "leadership is the foundation upon which all else is built for the Army to fight and win our nation's wars."[3]

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[1] United States, Department of Defense, TRADOC PAM 525-3-0. *The Army Capstone Concept.* http://www.tradoc.army.mil/tpubs/pams/tp525-3-0.pdf ; Internet; accessed 9 April 2011, 5. GEN George W. Casey Jr., "The Army of the 21st Century," *Army Magazine 59*, no. 10 (October 2009), 34.

[2] United States, Department of Defense, "A Leader Development Strategy for a 21st Century Army," http://cgsc.edu/ALDS/ArmyLdrDevStrategy_20091125.pdf; Internet; accessed 12 January 2011, 4.

[3] Ibid., A-1.

Much has been written about the quality of the US Army's equipment that is continuously updated to integrate the latest cutting edge technology. However, the Army continues to acknowledge that no matter how technologically superior our military is to other armed forces, without great soldiers operating that equipment and outstanding leaders ready to ensure that the unit is accomplishing the correct mission, that equipment would be useless. The Army states that the "very survival of our nation is dependent on the quality of its leaders and the system that produces them."[4]

PROBLEM STATEMENT

In response to this need to develop leaders in such a dynamic and complex environment and for an even more complex future environment, the Army produced the *Army Leader Development Strategy for a 21st Century Army* (ALDS) in 2009 and more recently the *Army Learning Concept 2015* (ALC), released in 2011. The Army designed these documents to provide strategic guidance for effective future leader development. The Army acknowledges that in this new operating environment, "the most important insights into mission accomplishment often come from bottom up, not top down." This realization places importance on harnessing the knowledge that Army junior leaders are gaining through extensive operational assignments. Decentralization of operations has increased the importance of the knowledge that junior officers possess. The Army believes that it needs to effectively aggregate that knowledge and leverage it for overall improvement of Army operations.[5] It goes on to say that the Army must build an "environment of collaboration and trust" that will facilitate adaptation and

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[4] *Ibid.*, A-1.
[5] *Ibid.*, 5.

innovation. These assertions are important and the Army is transforming itself to provide an adaptable program to give its leaders the best development possible.

These new documents provide guidance to the leaders of the Army in how to develop its junior leaders. The Chief of Staff of the Army identified some key points on this topic in his memorandum to all General Officers, Senior Executive Service, and their Command Sergeants Major. He highlighted the need to leverage the combat experience of our current leaders, to build an environment that facilitates distributed learning and values self-development and lifelong learning, and he asks that leaders at all levels share their lessons learned from personal experiences. The new ALC and ALDS expand upon this guidance and build a more detailed problem statement for leader development.   The ALDS states that the Army and its leaders need to design and resource a capability for life-long learning and its support structure.[6] This is also critical but little is said about how the Army will achieve this effectively. The ALC and the ALDS expand the requirements but do not identify how specifically it will best leverage the experience of our Army leaders and accomplish distributed learning. The Army Chief of Staff anticipates that Army leaders will increasingly have more time to train at home station due to the troop drawdown in current conflicts and that it must address how it should "take advantage of this time to institutionalize effective … leader development for full-spectrum operations."[7]

The ALDS and ALC are designed to provide guidance and a framework for what the Army wants to develop in its leaders. These documents do not prescribe a solution to the problem of how to effectively harness the knowledge of our combat hardened leaders, to build and resource a development system that fosters self-development and lifelong learning, and to

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[6] *Ibid.,* 10.
[7] GEN George W. Casey Jr., "Army Training and Leader Development Guidance, FY 10-11," http://exprdev1.dca.expr.net/obfweb/search/Detail.aspx?objectid=29247#DocumentMetadata Internet; Accessed 11 April 2011.

develop a system of leader development that provides information and education to develop leaders capable of succeeding across the full spectrum of conflict. These documents provide thorough guidance and quality content concerning what qualities we want to develop and in many ways, how the Army will achieve these goals. However, they do not fully address these key aspects of harnessing knowledge and lifelong learning in a system diverse enough for the emerging complex environment. The platforms, in the form of communities of practice, exist to accomplish these goals and the Army has begun to recognize the benefits of these platforms but full institutionalization must occur in order for the Army to fully realize the leader development system that it desires. The Army's current leader development framework, outlined in the ALDS and the ALC, does not discuss communities of practice, how knowledge will be generated, accumulated or shared, or how these communities of practice can facilitate the meshing of the three pillars of the leader development strategy.

This is an important topic because the benefits that the Army could realize from these knowledge management platforms will not fully materialize unless the Army institutionalizes them as part of its leader development program. The Army has identified important goals for leader development and knowledge management. By fulfilling some of its knowledge management goals through effective implementation of communities of practice and linking the communities to leader development goals, the Army will begin to fully realize a system that will help manage the dynamic future operating environment. Unless the Army addresses knowledge creation and other principles related to proven practices for effective communities of practice and organizational learning, it will not fully realize the lofty learning concept and leader development strategy that it has initiated.

The Army leader development framework currently consists of three pillars that are based on the Army Capstone Concept. These three pillars are training, education, and experience and are the foundation that supports the ALDS. The Army has not provided official guidance on how Army leaders should use knowledge management platforms for sharing their knowledge, self-development or lifelong learning. Until this happens, these programs will lack awareness and understanding and will likely not reach their full potential in facilitating leader development.[8]

Academic research acknowledges that communities of practice can play an integral part in effective leader development. These studies, to be demonstrated in this paper, also show that leadership plays an important part in knowledge creation which is an integral part of knowledge transfer in an organization.[9] This is an important aspect of leader development that the Army does not address in either the ALC or ALDS. By analyzing academic research in the area of leader development and communities of practice, the Army can effectively integrate its knowledge management platforms into its leader development strategy to best facilitate its goals of providing a leader development strategy that fully supports self development and lifelong learning.

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[8] I am an active duty US Army Major and have contacted 12 of my active duty peers. None of us are actively engaged in the Army's communities of practice and many were unaware of some of the various platforms available. I also began my discussion on an Army platform. Here I received 6 positive responses about individual's personal experiences with online professional development. These are officers though that are already members of S3/XO net.

[9] Rebecca Mitchell, and Herman HM Tse, "A Theoretical Model of Transformational Leadership and Knowledge Creation: The Role of Open-mindedness Norms and Leader-member Exchange," *Journal of Management & Organization 16*, Issue 1, (March 2010) and Lex Chalmers, and Paul Keown. "Communities of Practice and the Professional Development," *International Journal of Lifelong Education 25*. Issue 2 (Mar/Apr 2006): 139; http://web.ebscohost.com/ehost/detail?vid=7&hid=8&sid=8900cb02-e196-4e0d-b144-fb33b14b77c9%40sessionmgr10&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=aph&AN=19977923; Internet; Accessed 16 March 2011.

THESIS STATEMENT

This paper argues that within the Army's leader development transition, knowledge management, and specifically online communities of practice, can play an important role in achieving many of the desired effects that its Senior Leaders have identified in the ALDS and ALC. The current leader development model is insufficient to thoroughly accomplish the goals set forth in the ALDS and ALC. The community of practice platforms that the Army has created to facilitate knowledge management and to better connect its people will provide important capabilities that can effectively harness the knowledge of its experienced leaders and provide them with a critical knowledge transfer platform. This will achieve the desired goal of aggregating the Army's acquired knowledge for the improvement of Army operations. These communities of practice will allow these leaders to effectively explore practical self-development and will facilitate lifelong learning. They will accomplish the Chief of Staff of the Army's directive for senior leaders to share their lessons learned from past experiences. This paper will utilize academic and defense research to argue that knowledge management platforms should be implemented as a part of the Army's leader development strategy.

METHOD

This research paper is focused on knowledge management and the role that communities of practice can have in the Army's desire to enhance it leader development strategy. It will do this by first outlining the problem and the reason that the Army believes that it needs to enhance its leader development strategy. It will identify the important mediums that the Army has used

to convey its guidance on future leader development. Since this paper is focused on the knowledge management (including knowledge creation and knowledge transfer), leader development, and the fairly new concept of communities of practice, it will explore applicable academic research and civilian analysis of these specific topics. The author will at times draw on his (over thirteen years) and his peer's own experiences as US Army Officers.

This paper will outline the Army's current leader development model and will point out the shortfalls of the current model as compared to the desired effects described in the new ALDS, ALC, and Chief of Staff guidance memorandum. It also acknowledges the fundamental soundness of the three pillars of leader development while exploring the ways that they do not meet all of the goals outlined in the Army's future leader development strategy. It will then analyze the Army's current online community of practice platforms using the experience of the author and academic research available on the use of knowledge management, knowledge creation, and knowledge transfer. The understanding derived should help to develop recommendations to the Army concerning best use of these communities of practice. This paper will then outline ways that the knowledge management platforms will supplement the leader development framework and more effectively provide Army leaders the ability to engage in self development and lifelong learning.

This topic is rapidly evolving in the United States Army and new information, clarification, and directives are emerging as this analysis occurred. The ALC was actually released after the initial research for this paper was complete. Throughout the many months of research for this topic, new material and Army guidance emerged and is still being refined and updated upon completion of this paper. Hopefully, this paper will serve to strengthen the link

between the Army's development of knowledge management through communities of practice and its guidance and vision for future leader development for the Army of the 21st Century.

LITERATURE REVIEW

This literature review explores the body of academic work that applies to leadership and leader development, knowledge management, and communities of practice. The search identified considerable research in the area of knowledge management. However, much of that research is largely focused on two specific areas: health care and formal education. The corporate sector, educators and health care practitioners have been among the pioneers in organizational learning and to some extent also in communities of practice. The literature review found only two studies concerning the application of communities of practice and their affect on leader development but these studies contained applicable principles to this paper.

Leadership and Leader Development

This paper focuses on leadership through an officer perspective. In discussing officership as a profession, former US Army Colonel and Academy Professor Don Snider[10] draws on insights made by Samuel Huntington. He describes Huntington's pronouncement that a professional officer corps is a collective self-policing entity. He goes on to state that all professions have two common jurisdictions. The first is to develop their profession's expert

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[10] Don Snider, "Officership in the United States Army: Current Concepts and Future Adaptations," in "Take Me to Your Officer: Officership in the Army." *The Occasional-Number 54* edited by Stephen Deakin, 14-24. Shrivenham: Strategic and Combat Studies Institute, 2008, 18.

knowledge, and the second is to develop their own professionals.[11] He comments that this is

usually done through formal schooling and the experiential learning under the mentorship of

more experienced individuals. These are foundational principles in leader development and link

the importance of leader development to the Army officer profession. The link between

knowledge management and leader development is an important topic for this paper and is

supported by research completed and reported on by Antonakis, Cianciolo, and Sternberg in their

report titled "Practical Intelligence and Leadership: Using Experience as a 'Mentor'" in Leader

Development for Transforming Organizations.[12] This study is important to the Army's

understanding and application of experience-based learning and how it relates to leader

development. This is the premise for linking communities of practice to leader development.

This study is also relevant to the ALDS because their recommendations are derived from a

development focus based on rapid leader development. This is because they acknowledge that

today's operating environment is constantly changing creating significant time constraints.

Antonakis et al's aim is to facilitate experience-based learning by addressing the cognitive skills

involved in acquiring and applying experience-based knowledge to effective leadership.   They

describe practical intelligence as intelligence that "supports everday problem solving in

situations where problems must be defined before a solution can be reached and the information

necessary to determine a solution strategy is often incomplete."[13] Their research shows a direct

link between practical intelligence, managerial performance, and military leadership. Their study

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[11] Ibid., 18-19.
[12] John Antonakis, Anna T. Cianciolo, and Robert Sternberg, "Practical Intelligence and Leadership: Using Experience as a Mentor," In *Leader Development for Transforming Organizations: Growing Leaders for Tomorrow,* edited by David Day, Stephen J. Zaccaro, Stanley M. Halpin. New Jersey: Lawrence Erlbaum Associates, Inc., Publishers, 2004, 211.
[13] Ibid., 213.

is important to this body of knowledge because it can directly be applied to the Army leader

development program.

William Byham's research and experience supports much of what Antonakis et al

proposes concerning leader development in Byham's book "Grow Your Own Leaders: how to

identify, train, and retain leadership talent." This book provides guidance to organizations on

leader development. The background for Byham's proposals for leader development comes from

extensive business leader development consultation over the last three decades. Byham focuses

on identifying critical organizational knowledge that leaders need to be successful within the

organization. Like Antonakis et al, Byham focuses on disseminating that knowledge to better the

organization but Byham does not link it to communities of practice. Byham states that the

options for growing leaders within the organization are growth through assignments, through

short-term experiences, through training/executive education, and through professional

coaching.[14] These are very much supportive of the Army's current leader development model.

The process is to identify potential leaders in the organization and complete a plan to develop

their skills and knowledge within the identified organizational knowledge areas. The

organization can accomplish this by putting the future leader in assignments that focus them on a

specific area of organizational knowledge. This is especially effective when a deep, broad

understanding of that knowledge is important. Since it is rarely feasible to place these

individuals in a long term assignment linked to each aspect of organizational knowledge, short-

term experiences can provide enough skill and knowledge in other knowledge areas to

accomplish this goal. The focus with short-term experience is not for the leader to master certain

skills in organizational knowledge but to give the leader the chance to listen or observe these

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[14] William C. Byham, Audrey B. Smith, and Matthew J. Paese, *Grow Your Own Leaders,* (New Jersey: Financial Times Prentice Hall, 2002), 175-178.

specific areas enough to understand them and build their tacit knowledge of the subject. This

concept begs the question of whether acquiring this knowledge through an online experience in a

community of practice would effectively supplement the actual short-term experience enough to

give the leader the requisite knowledge to act appropriately. The authors give many examples of

ways that organizations can implement short-term experience growth and each example has the

leader doing something such as preparing a report, teaching a class, leading a program review,

etc. but do not suggest communities of practice as one of the ways. Finally, Byham's analysis

supports the aspect of quality control over the training supporting the idea that the organization

should strive to achieve quality control and standardization of organizational knowledge.

Antonakis et al's research makes an important point when it identifies that formal

leadership education does not fully develop junior leaders with enough tacit knowledge, or

experience-based knowledge to effectively lead thus creating the need for supplemental

development programs. Antonakis et al points out the importance to effective leadership of

practical knowledge, or the "general ability to learn from experience and to apply experience-

based, or tacit, knowledge to novel everyday problem situations."[15] One implication from their

focus on practical intelligence is that there is a direct correlation to leaders with high practical

intelligence and their level of leadership expertise. However, that practical knowledge is

dependant on the individual being exposed to the tacit knowledge through experience. The

difference in Antonakis et al's conclusion on this topic is that communities of practice should

play a role in knowledge transfer.   Finally, Byham places a premium on professional coaching

and its ability to offer expert advice to leaders. They can be a "catalyst or facilitator of

individual development and performance."[16] These professional coaches can facilitate growth in

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[15] Ibid., 214.
[16] *Ibid.,* 242.

three areas: acquiring skills, optimizing skills for success, and whole person development. These

coaches need to have extensive experience and sophistication of skills to be sufficiently

credible.[17]

Victoria A. Guthrie and Ellen Van Velsor provide important findings in their article

"Enhancing the Ability to Learn from Experience" in the Handbook of Leadership Development.

Guthrie and Van Velsor give support to the Army's current strategic goal of creating a culture of

leader development that facilitates lifelong learning. Their research acknowledges that in order

to maintain effectiveness, leaders must be able to actively and continuously learn. Their research

concluded that most managers are not active and continuous learners which organizations should

try to change since it is important to find ways to learn and adapt to stay current with the

changing environment. Guthrie and Van Velsor identify that in order to learn from experiences,

one must recognize when they may need new skills, behaviors or attitudes. Once the need is

identified, they should engage in a variety of developmental experiences to learn or test new

skills. It is also important to develop a variety of learning tactics to acquire the new skills,

approaches or attitudes.[18]

The key aspect of Guthrie and Van Velsor's research is their focus on the roadblocks to

learning and how to overcome them.[19] The Army's leader development program may experience

similar roadblocks and can benefit from this analysis. Learning from experience can face

challenges such as individuals not focused on experiences as learning opportunities since

learning typically happens in a classroom environment. Most people must change their thinking

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[17] *Ibid.,* 254

[18] Victoria A.Guthrie, and Ellen Van Velsor, "Enhancing the Ability to Learn from Experience," in *Handbook of Leadership Developmen,* edited by Cynthia D. McCauley, Russ S. Moxley, and Ellen Van Velsor, 242-261. San Francisco: Jossey-Bass Inc., 1998, 243.

[19] These roadblocks revolve around the fear of learning and accepting that one has room for improvement. The fear of learning also involves fear of trying something new or trying to avoid failure.

about learning and focus on how they may better spend time reflecting on their experiences and extracting lessons from those experiences. The US Army has created a culture that already does this to a certain extent by putting importance on leaders conducting after action reviews (AARs) on every training experience. What the Army does not do is create a forcing mechanism[20] to allow the lessons learned from each of these AARs to be submitted into the appropriate community of practice for all to share. Learning from experience requires that people be willing to accept that they can do things better than they are currently doing them. This creates a situation in which a considerable amount of inertia is required to effect change; humility is important to the extant that the individual is willing to accept a new skill, attitude or behavior. Finally, the organization must provide a level of support of individuals in their organization learning (or failing) in experiences. The organization needs to help people receive and hear the information they need to hear, obtain understanding from that information, create development plans and generally support their growth from experience. Another aspect of their study is an identification of four major categories of learning tactics. These are the main ways in which people learn and their hypothesis is that the more ways that people learn, the greater the variety of learning challenges they will master. The four categories are: thinking, taking action, accessing others, and feeling. "Thinking tactics are solitary, internal cognitive activities."[21] This includes visualization of the past or imagination of the future to explore how things compare or might compare to what you already know. It also relates to any personal study of available facts or data which can be accomplished through communities of practice. Accessing others is concerned with seeking advice, support, or help from role models, coaches or perceived experts. Feeling tactics are about managing the fear of trying something new or exploring different

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[20] Forcing Mechanism: Institutionalized mandatory procedure.
[21] *Ibid.,* 251.

experiences. People can avoid taking advantage of learning opportunities because of a fear of

failure. Talking to a friend or confiding the fear in a journal are suggestions for overcoming the

commonly experienced psychological discomfort of adopting new learning tactics and freely

moving forward to explore new areas. The Army may benefit from exploring how sharing

experiences in communities of practice may benefit leaders in managing fear.

Knowledge Management, Transfer, and Creation

The topic of Knowledge Management is a rapidly transforming area of discipline because

of the rapid development of technologies that proliferates the interconnectedness of

organizations. Organizational knowledge has always been important but globalization and

networking technologies have increased the dynamic aspect of knowledge transfer whereas

before this development, knowledge creation and transfer was a more deliberate and controlled

process. The broad area of knowledge management had an extensive list of journal articles and

books contributing to the body of knowledge on the subject.

Argote, McEvily, and Reagans provide a comprehensive overview and applicable

synthesis of knowledge management and organizational knowledge application in their article

"Managing Knowledge in Organizations" in *Management Science.* Their research is a

conglomeration of previous research and provides an overview of knowledge management

themes. One area of their research that is applicable to this paper is the identification of three

causal mechanisms which affect an individual's impact on their organization's knowledge.

These three mechanisms are ability, motivation, and opportunity to create knowledge and add it

to that organization's body of knowledge.[22] Through their research, they identify that training

directly affects an individual's ability to create and share knowledge. An effective reward and

incentive program can enhance the individual's motivation to create and share knowledge and

the opportunity to create and share must be made available by giving individual's pause in

between experiences so that they can share their applicable knowledge. Alavi and Leidner also

analyze knowledge management and specifically knowledge management system in their MIS

Quarterly article "Knowledge Management and Knowledge Management Systems: Conceptual

Foundations and Research Issues." Their research contributes to the understanding of

knowledge management systems beginning with the understanding that "hoards of information

are of little value; only that information which is actively processed in the mind of an individual

through a process of reflection, enlightenment, or learning can be useful."[23] This research is

important especially in its contribution to the role of knowledge management systems (KMS).

Specifically, this study identifies that KMS plays an important role in providing access to

knowledge; gathering, storing and transferring knowledge; in providing the effective search and

retrieval mechanisms for locating relevant information; and in enhancing the organization's

intellectual capital by supporting development of individual and organizational competencies.[24]

Ewest adds to the body of knowledge in his analysis of leadership's role in knowledge

management in his article titled Knowledge Management and Organizational Effectiveness:

Considering Applications for Leadership. He declares through his analysis of past research done

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[22] Linda Argote, Bill McEvily, and Ray Reagans, "Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes," *Management Science 49,* no. 4 (April, 2003): 575; http://www.jstor.org/pss/4133958; Internet; accessed 15 March 2011.

[23] Maryam Alavi, and Dorothy E. Leidner, "Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues," *MIS Quarterly 25,* no. 1 (March, 2001): 110; http://www.jstor.org/stable/3250961; Internet; accessed 16 March 2011. Linda Argote, Bill McEvily, and Ray Reagans, "Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes," *Management Science 49,* no. 4 (April, 2003): 575; http://www.jstor.org/pss/4133958; Internet; accessed 15 March 2011.

[24] *Ibid.,* 111.

on the subject that leadership should "design systems which capture, maintain and gain knowledge."[25] He brings up points that will be important to the Army's continued development of its communities of practice. He says that leaders will master an understanding of how organizations learn and bring the people of that organization together around the knowledge that the company has cultivated. The other half of this equation which is just as important is that the organization must be capable of utilizing the knowledge that it has to modify its behavior to reflect new knowledge and insights.[26] As important as knowledge management structures are, leadership will be a key factor in the dynamic exploitation of knowledge in an organization.

Rebecca J Mitchell and Herman HM Tse wrote an applicable study that linked leadership and knowledge creation. Tse and Mitchell have analyzed past research on knowledge creation in organizations and came to the conclusion that leadership definitely plays an important role in knowledge creation in organizations. Their personal study focuses on the type of leadership that can positively effect knowledge creation. They analyze both transformational leadership, leader-member exchange (LMX), and open mindedness norms. They find that the process of knowledge creation in organizations is "based on the generation of ideas through the assimilation of previously disconnected component knowledge into integrated knowledge among individuals at work."[27] This is important to the Army because its officer leaders have a broad background in different types of leadership styles and generally have a base understanding of these concepts and should therefore be able to adapt the conclusions of this study. Tse and Mitchell utilize research that shows that the knowledge-creation process can be disrupted by a lack of

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[25] Timothy Ewest, "Knowledge Management and Organizational Effectiveness: Considering Applications for Leadership," *Journal of Business & Economics Research 8,* no.11 (November 2010): 138.

[26] *Ibid.,* 139.

[27] Rebecca Mitchell, "A Theoretical Model… 84.

interpersonal trust and a lack of "explicit knowledge-sharing routines."[28] Transformational leadership develops in the members of the organization "buy-in" to the organization's purpose. This feeling of ownership can facilitate the knowledge-creation process because these members desire to benefit the organization. As the Army works to institutionalize its knowledge management processes, it can draw from this research to guide leader's ability to facilitate knowledge creation and transfer.

R.A Dalton wrote an important book specifically for the U.S. Army after working for over five years on the Army's Battle Command Knowledge Systems project. The book is only made available as a contribution to the militaries understanding of knowledge transfer and is designed as a practical guide instead of an academic work. It is not an official Army publication but has been made available through the Army's communities of practice. Dalton states that the purpose of military knowledge transfer is simply to "find those that have military experience and knowledge of value and transfer it as rapidly and easily as possible to those who need it."[29]

Communities of Practice

Army Major Thomas Woodie conducted a study of communities of practice and their role in Army professional education. His paper analyzes how the US Army educates its force in a rapidly changing environment. By analyzing literature about adult learning, experiential learning, and communities of practice, and by creating his own community of practice as a model, he concludes that the community of practice is a useful tool in educating the profession

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[28] *Ibid.*

[29] R.A. Dalton, *Knowledge Transfer for the Military Leader,* https://forums.army.mil/secure/CommunityBrowser.aspx?id=1266868&lang=en-US; Epublished only, 2010, Internet; Accessed 12 April 2011,4.

beyond the classroom walls.[30]   Another study concerning communities of practice that is

relevant to this paper is Gerald Joseph Mahar's study "Factors Affecting Participation in Online

Communities of Practice." The knowledge management platforms that the Army is creating to

handle information sharing and knowledge transfer are forms of communities of practice. Gerald

Mahar provides a solid overview of communities of practice and provides insight into the

complexities of unregulated knowledge creation in a community of practice that can be of benefit

to the Army. Mahar agrees with the importance of experienced, practiced individuals sharing

their knowledge with others who need those skills in the same work domain.[31] Mahar

acknowledges that within many companies' knowledge management strategies, communities of

practice have become the centerpiece of their strategy and have invested significantly in the

globalization of the network and access to the knowledge within these communities of practice.

This indicates the effectiveness to which these communities of practice can benefit an

organization. Mahar's most important contribution to the study of communities of practice is his

insight into what he identifies as the most important factor for the success of any community of

practice: member participation behavior.[32]

The Army contracted the Rand Corporation to undertake a study of Unit Leader

Development. The results of this study draw a link between the Army's knowledge networks

and leader development. Particularly, the study identifies that knowledge networks and

distributed learning provide important methods of sharing ideas and tools for leader

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[30] Thomas Woodie, "Learning Together: The Role of the Online Community in Army Professional Education," School of Advanced Military Studies, United States Army Command and General Staff College, http://cgsc.cdmhost.com/cgi-bin/showfile.exe?CISOROOT=/p4013coll3&CISOPTR=387&filename=388.pdf#search=%22woodie%22; Internet; accessed 17 March 2011, 1.

[31] Gerald Joseph Mahar. "Factors Affecting Participation in Online Communities of Practice," Doctor of Philosophy Thesis, University of Waterloo, 2007, 1.

[32] *Ibid.,* 7.

development.[33] The Rand study states that Army leaders do share knowledge and resources but the trend is that they only share their knowledge with their group of friends or professional acquaintances. Antonakis et al also contribute to the study of communities of practice. They show that experience-based knowledge is critical because once one has learned something in a particular environmental condition, if that condition is present in a new situation, then that practical knowledge is the link between what a person knows and the demands made by the environment. Their research concludes that tacit knowledge developed by expert performers, those who have developed experience-based knowledge, can be made explicit and shared. They go on to exclaim that communities of practice may help make tacit knowledge held by experts more explicit to developing leaders. Yet they caution that any delay in delivery of this feedback may reduce the effectiveness of the knowledge-acquisition process.[34] They identify that "leaders who are capable of developing a flexible knowledge base that is responsive to changes in … culture and mission of their organization will be better equipped to deal with leadership-related problems in their dynamic work environment."[35] Another counterpoint to this type of learning is that if the environment changes, the knowledge gained may become obsolete. This study directly acknowledges one of the Army's Communities of Practice, the Center for Company Level Leader's website www.companycommand.com, as an example of a medium for improving tacit knowledge.

As the Army searches for a leader development model that adequately facilitates lifelong learning of its leaders, it can draw from the research of Lex Chalmers and Paul Keown in their study titled "Communities of Practice and Professional Development" in the *International*

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[33] Peter Schirmer, Nancy E. Blacker, Richard R. Brennan, Jr., James C. Crowley, Henry A. Leonard, Michael Polich, , Jerry M. Sollinger, and Danielle M. Varda, *Leader Development in Army Units: Views from the Field.* Santa Monica: Rand Corporation, 2008, 66.

[34] John Antonakis, "Practical Intelligence and Leadership… 218.

[35] *Ibid.,* 229.

Journal of Lifelong Education.[36] Their study analyzes the way that communities of practice facilitate lifelong learning in developing professionals. This study is one of the most important to this paper because of the direct link that it analyzes between communities of practice and professional development. It proposes a "communities of practice approach" to professional development.[37] One aspect of this research that is helpful is their assertion that "teachers learn best when working in a dialogue and action community…(where) ideas, perceptions and approaches are shared, discussed and debated."[38] This is one of the aspects that communities of practice provide to the learner and it should not be too much of a stretch to assume that this does not just apply to teachers but can be true about officers as well. Chalmers and Keown also discuss important group dynamics that should exist to make a community of practice most effective.

CHAPTER 2: ARMY LEADER DEVELOPMENT MODEL

In order to establish the role that knowledge management platforms can play in the development of Army leaders, it is important to first analyze the leader development framework. This analysis will compare the goals set forth in the ALDS and ALC to the pillars of the leader development framework and will identify shortfalls that the Army must address. The analysis of the framework will draw upon the Army's leadership doctrine, FM 6-22 and the guidance set forth in its new ALDS and ALC.

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[36] Lex Chalmers, "Communities of Practice… 139.
[37] *Ibid.,* 140.
[38] *Ibid.,* 148.

ARMY LEADERSHIP DOCTRINE

The Army's leadership doctrine, FM 6-22 is the keystone leadership document for the

United States Army. Last updated in 2006, this document outlines the roles and responsibilities

of leaders and provides the basis of how the Army develops its leaders. It provides foundational

qualities that the Army desires of its leaders. The Army acknowledges that leadership does not

manifest itself solely in commissioned officers, but is a fundamental quality to be developed in

every US Army soldier, non-commissioned officer, civilian employee and commissioned

officer.[39] This paper will focus on commissioned officer development specifically although it

acknowledges that the leader development conclusions can well be applied to the other groups as

well.

FM 6-22 describes leader development as a "deliberate, continuous, sequential and

progressive process" that is accomplished through "institutional training and education,

organizational training, operational experience, and self-development."[40] It explains further that

there are three domains that shape these critical learning experiences: 1) institutional training; 2)

training, education, and job experience gained during operational assignments; and 3) self-

development. The Army is very deliberate about the execution of the first two domains.

Institutional training is executed through professional military education concretely established

to occur at specific points in an Army officer's career. Operational assignments that occur in

between these specific educational training levels are carefully monitored to give officers a

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[39] United States, Department of Defense, FM 6-22, *Army Leadership,* Washington: Government Printing Office, 2006, v.
[40] *Ibid*., 8-9.

breadth of operational experiences within their expertise.[41] The third domain however, is not

well established in the leadership doctrine. It acknowledges that learning the profession of arms

must be a lifelong commitment but the vehicles for that learning are not discussed. The doctrine

also acknowledges that leaders will not always get every training experience that they will need

to become proficient and that leaders should substitute that experiential learning by harnessing

the experiences of others and what they have learned from those experiences.[42] This aspect of

development is important and lends toward the need for an effective platform to harness the

experiences of others.

ARMY LEADER DEVELOPMENT STRATEGY

        ALDS uses the Army leadership field manual to create a strategy to develop leaders who

are prepared for a future of dynamic challenges in dynamic environments. The Army wants

these leaders to be able to lead in the full spectrum of operations from stability and support to

high intensity conflict. The ALDS seeks to produce "confident, competent, versatile leaders for

our 21st Century Army."[43] Since the increased operational tempo of Army units that has occurred

since the September 11 attacks on the United States, the Army acknowledges that it needs to

regain balance in developing its leaders. The increased operational tempo of the Army has

caused an imbalance in the three pillars of leader development: training, education, and

experience. Leaders are getting a significant amount of experience but training and education

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[41] United States, Department of Defense, FM 7-1, *Battle Focused Training.* Washington: Government Printing Office, 2003. 7.
[42] Department of Defense, FM 6-22…, 8-11.
[43] United States, "A Leader Development Strategy… 1.

have suffered.[44] Also, the Army identified the need to re-balance its training focus on the full

spectrum of operations so that leaders are competent enough in both peaceful competition and

general war. Along with rebalancing the three development pillars, the ALDS establishes eight

imperatives that guide the integration of policies, programs, and initiatives that support leader

development.

The primary method for accomplishing this new strategy is the three pillars of leader

development. The ALDS mission statement is to "educate, train, and provide experiences to

progressively develop leaders to prevail in Full Spectrum Operations in a 21st Century security

environment."[45] The ALDS goes on to declare that developing leaders will be a career-long

process. Progressive development over a career-long timeline is lofty goal that can only be

accomplished through a process of life-long learning. The three pillars of education, training,

and experience are fundamental to this process but do not provide continuity to the leader

development process. The first leader development imperative of the ALDS states that the Army

will "encourage an equal commitment by the institution, by leaders, and by individual members

of the profession to life-long learning and development."[46] This imperative cannot be fully

actualized by the three leader development pillars as they currently exist. This life-long learning

requires an individual to achieve a certain level of self-development to fill knowledge gaps that

professional military education, experience and training cannot fill.

In the Full Spectrum Operations (FSO) environment, the multitude of skills that

individuals must be proficient in pose a significant challenge for Army leaders. The ALDS

recognizes that the complexity of this security environment is such that the Army will not be able

to dominate the different dimensions of the spectrum of conflict. The Army sets a goal of being

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[44] *Ibid.,* 2.

[45] Ibid., 6.

[46] Ibid., 10.

able to dominate at "times and in places of our choosing."[47]   This requires a learning

environment that provides flexibility to the individual seeking knowledge at the time and place

of necessity. This is amplified by three paradigm shifts that the ALDS states that the Army is

facing: 1) the effect of complexity and time, 2) the effect of decentralization, and 3) the need to

frame ill-structured problems. These are important to understand the aspects of professional

development that lifelong learning must address. The complexity of the operating environment

demands that leaders be competent across a range of skills much broader than simply the

application of force to create an effect. The US Army has increasingly come up against an

enemy that is decentralized and working autonomously but with a common purpose. This has

created a need for greater empowerment of leaders at the lowest level possible in the military in

order to allow them to act decisively "in a manner consistent with the concept of mission

command."[48] The need to operate across the full spectrum of operations necessitates operational

adaptability. The Army Capstone Concept (ACC) declares that in order to achieve operational

adaptability, the Army must develop its leaders to analyze complex scenarios in order to

maintain the initiative. The evident changes in the operating environment create the need for a

dynamic Army leader development program able to adapt to rapidly changing mission sets.

Moreover, the ACC highlights the reason why leader development systems must evolve and

more thoroughly develop leaders to manage increasingly complex scenarios.

ARMY LEARNING CONCEPT

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[47] Ibid., 3.
[48] United States, *The Army Capstone Concept*...31.

To tackle this vast leader development challenge, the Army first published the ALDS, then it created the US Army Learning Concept for 2015 (ALC), a training pamphlet designed to compliment the ALDS. The ALC acknowledges that in a progressive learning environment designed to facilitate the life-long learning necessary for Army leaders to succeed in the contemporary operating environment, the development strategy must blur the lines between the operational army and the generating force. The key to this is "meshing together self-development, institutional instruction and operational experience."[49] The ALC further identifies that future Army learning must be able to occur at the point of need, not just at specific times or locations as is currently the model. It goes on to identify that the future learning model must facilitate the ability for leaders to continually contribute to the body of knowledge.[50]

The ALC, in line with the ALDS recognizes that future Army learning, designed to enhance the leader development program, must harness new technologies and realize that the next generation of leaders are adept at computer-based communication and education. The learning model states that the Army must provide tools that give Army leaders access to relevant information and must facilitate appropriate knowledge content accessible at any time. This generation has routinely engaged in online networking and new media in both social and educational ways. The ALC desires to harness emerging technologies to facilitate a career-long continuum of learning that will effectively integrate the three pillars of leader development.[51]

These aspects of learning identified by the ALC describe the Army's need for a system beyond the three platforms of the leader development program. The ALDS and ALC do not set out to radically transform the current three pillars, nor should they. Byham's analysis of leader

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[49] United States, Department of Defense, TRADOC PAM 525-8-2, *The United States Army Learning Concept for 2015,* https://atn.army.mil/Media/docs/Army%20Learning%20Concept%202015.pdf; Internet; accessed 9 April 2011, 9.
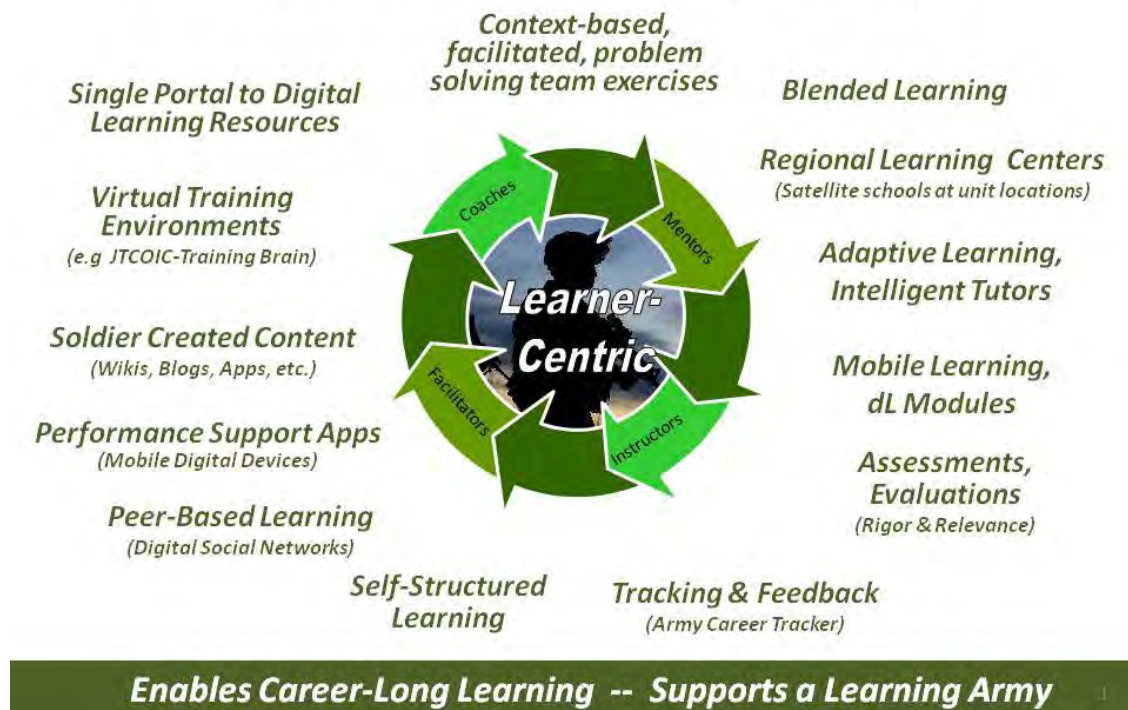[50] *Ibid.,* 10.
[51] *Ibid.,*14.

development proposes the same type of leader development methodology as the Army is using.

The ALDS simply calls for the Army to commit to rebalancing the pillars to strengthen the

education pillar that has suffered at the expense of operational experience. Antonakis et al

argues that formal leader education alone does not fully develop junior leaders with adequate

tacit knowledge to effectively lead thus proving the necessity for a more comprehensive

development program.[52] The ALDS and ALC are outlining issues important to leader

development that rebalancing the pillars alone will not achieve. Two of these issues, or gaps in

the model, are the need for a system to promote lifelong learning and self development and the

need to harness the vast and deep knowledge of the Army's combat-tested leaders.

The ALC has created a model (figure 1) that reflects the ideas that the Army has created

to achieve some of these goals. This learner-centric learning environment highlights the need for

the Army to facilitate Soldier created content (wikis, blogs, apps, etc.), peer based learning

(digital social networks), and self-structured learning. These concepts begin to bridge the gap

between the three pillars and the desired leader development system attributes that will facilitate

self-development and lifelong learning. Though the ALC was just published in the last year, the

Army has been embracing some of these concepts informally for a longer period. The following

section will provide an overview of the Army's applicable knowledge management platforms.

Figure 1

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[52] John Antonakis, "Practical Intelligence and Leadership… 214.

Some Characteristics of a Learner-Centric 2015 Learning Environment

Single Portal to Digital Learning Resources

Virtual Training Environments
(e.g JTCOIC-Training Brain)

Soldier Created Content
(Wikis, Blogs, Apps, etc.)

Performance Support Apps
(Mobile Digital Devices)

Peer-Based Learning
(Digital Social Networks)

Context-based, facilitated, problem solving team exercises

Self-Structured Learning

Coaches

Mentors

Facilitators

Instructors

Learner-Centric

Blended Learning

Regional Learning Centers
(Satellite schools at unit locations)

Adaptive Learning, Intelligent Tutors

Mobile Learning, dL Modules

Assessments, Evaluations
(Rigor & Relevance)

Tracking & Feedback
(Army Career Tracker)

Enables Career-Long Learning -- Supports a Learning Army

CHAPTER 3: KNOWLEDGE MANAGEMENT IN THE U.S. ARMY

HISTORY

The Army has demonstrated that leader development must make a leap forward in progress to cope with the 21st Century operating environment. It acknowledges that it must harness the operational experience of its current leadership and create an environment that facilitates leader self development and lifelong learning. The aspect of needing to harness the knowledge and experience of its battle tested junior leaders cannot be exploited fully by the three

pillar leader development model. The tacit knowledge that resides with these leaders can be

shared with co-located peers whether they are immediately in an educational, training, or

operational deployment environment but the Army is more interested in fully exploiting their

experiences for the full benefit of all Army leaders. This field is knowledge management and the

Army is rapidly expanding its policies and procedures with respect to this emerging discipline.

The business community began in the 1990s to create private and public networks for their

employees to create, acquire, and share relevant knowledge among their company which

effectively developed some of the first knowledge management strategies.[53] This section will

provide an overview of relevant academic analysis of the field of knowledge management and

will analyze how the Army has dealt with knowledge management and how it is moving forward

to better exploit its vast knowledge among its people.

The US Army began to realize that it needed to harness the knowledge of the

organization in the mid 1980s.[54] The Army had recently created the National Training Center in

the desert of Southern California designed to provide a realistic combat training site for its vast

heavy maneuver Army. This training site gave leaders as close to a real combat operational

experience as possible. The cadre at the National Training Center gave thorough critical analysis

of the actions of these units/leaders thus providing lessons learned for each rotation. The Army

realized that it had no mechanism to harness these lessons that individuals and units were

learning from this valuable experience. Units from all over the Army came to NTC to put their

skills to the test and to learn new tactics, techniques, and procedures. However, except for the

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[53] Gerald Joseph Mahar, "Factors Affecting Participation …1.
[54] The Center For Army Lessons Learned, "A Guide to the Services and the Gateway of the Center for Army Lessons Learned," Handbook No. 97-13, http://www.globalsecurity.org/military/library/report/call/call_97-13_history.htm; Internet; Accessed 5 April 2011.

knowledge that the cadre retained from each rotation and subsequently passed on to future

training units, this information was not being shared with the entire Army.[55]

The Army's answer to this shortfall in knowledge management was to create the Center

for Army Lessons Learned (CALL) at Fort Leavenworth, Kansas. CALL gathered the valuable

lessons from the National Training Center and published them in journals for the rest of the

Army to read and benefit from. As more training centers were created for other types of combat,

the CALL grew and actually created a branch of the organization dedicated to data collection of

actual combat operations beginning with Operation Just Cause in Panama.[56] This process of

knowledge collection and publication dealt specifically with Army tactics, techniques and

procedures for accomplishing mission specific tasks. This is the beginning of the Army's formal

process of knowledge management. This method gave the Army strict control over the lessons

that it shared with the rest of the Army through its publications. It is important to understand

how the CALL determines what information, or lessons learned, it publishes. The Army defines

a lesson learned as "validated knowledge and experience derived from observations and

historical study of military training, exercises, and combat operations."[57] The problem with this

program in relation to the Army's new leader development strategy is that this type of data

collection process is too formal and could never in this way fully capture the plethora of

experience that leaders have to share from America's protracted campaign against terrorism.

Another way that the Army has managed its knowledge from individuals is in a

decentralized manner through branch-specific (i.e. field artillery branch) professional journals.

These journals have a long history of managing the professional knowledge of their specific

branch of the Army. For example, the Field Artillery Journal was first published in 1911 and has

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[55] *Ibid.*, and my own experience training at and interacting with the NTC and CMTC.
[56] *Ibid.*
[57] *Ibid.*

been acting as a professional journal continuously since.[58] This type of professional journal

accepts submissions that relate to that professional field. Both Field Artillery professionals and

other Army professions that interact with the Field Artillery contribute knowledge for

publication. The process is typical of any professional journal in that there is a journal editor

who manages what information gets published in each issue. There are barriers to this type of

information sharing. First, each journal can only publish a finite number of articles in each issue.

Second, the contributor has to have the confidence to write an article worthy of publication in

order to share the tacit knowledge that he or she deems worthy of sharing with the rest of the

profession. The Army, in analyzing the emerging concepts of knowledge management, has

identified that it needs to evolve the methods and procedures that it uses to facilitate knowledge

sharing within its knowledge management framework.

NEW PLATFORMS

In its move to realize truly dynamic knowledge management, the Army developed the

Combined Arms Center-Knowledge at Fort Leavenworth, Kansas.[59] The mission of this

organization is to create, organize, apply and transfer knowledge to enable the force and the

vision is a "network of knowledge organizations enabling Operating and Generating forces to

share what they know or access what they need to know anytime, anywhere."[60] The goal of

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[58] Patrecia Slayden Hollis, and David T. Zabecki, "History of the Field Artillery Magazine: Pointing the Way to the Future," *Field Artillery Journal,* (March 1 2007), http://www.thefreelibrary.com/History+of+Field+Artillery+magazine%3a+pointing+the+way+to+the+future.-a0166433735; Internet; Accessed 6 April 2011.
[59] The Center For Army Lessons Learned, "About Combined Arms Center – Knowledge," http://usacac.army.mil/cac2/cac-k/about.asp; Internet; Accessed 11 April 2011.
[60] Ibid.

knowledge management is to facilitate experiential knowledge transfer between Soldiers.[61]This

organization is directed by an active duty Army Colonel and is the Army's hub for its knowledge

management strategy. This organization is broken down into five directorates including: Battle

Command Knowledge System (BCKS); Combined Arms Doctrine Directorate (CADD); Center

for Army Lessons Learned (CALL); Combat Studies Institute (CSI); and Military Review. This

mix of organizations is important for thorough knowledge management. These organizations

each play a significant and unique role in the collection of the Army's organizational knowledge,

analysis of that knowledge, translation of that knowledge into functional doctrine and the sharing

of that knowledge with the right people at the right time. It is beyond the scope of this paper to

analyze each of these organizations individually. What is important though is to understand the

BCKS and the role it plays as the proponent lead of professional forums (a community of

practice) and Army knowledge management. BCKS is the primary tool that Army leaders can

utilize to share their knowledge and best augment the three pillars of leader development in a

lifelong learning program.

     The Army's use of the internet to connect its soldiers for the purpose of increasing their

level of professional knowledge began as a grassroots effort outside of the Army's organizational

umbrella. Two young company commanders in Hawaii had recently taken command of their

Army Company level units and began discussing the challenges they were facing in command.

They had the same resources available to them, books about army leadership and even

specifically about company command, however they realized that their unique approaches

brought value to each other's perspective.[62] Having some experience in online professional

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[61] The Center For Army Lessons Learned, "Why is Knowledge Management Important to the Army," http://usacac.army.mil/cac2/AOKM/WhyKMImportantArmy.asp; Internet; Accessed 12 April.

[62] In May of 2010 at West Point, NY, I had lunch with one of the two original creators of company command website, LTC Burgess and he shared with me the general story of how he created companycommand.com.

forums, these two officers purchased a website domain and began a website forum for company commanders. The purpose of this defacto community of practice was to connect past, present and future company commanders in an ongoing conversation concerning this unique challenge of building combat-ready units. The website was personally run by the two officers at first but the Army, recognizing the value that this knowledge transfer mechanism brings to overall organizational knowledge brought it into the Army's official organization by moving it to an Army.mil domain and hosting the site at the United States Military Academy at West Point, NY. At about the same time that the company command project was taking place, the Army experimented with a new program called Warrior Knowledge Network which later became what is now BCKS. This was the Army's first attempt at "formally managing knowledge on a grand scale."[63] The Army identifies that in 2002, another professional forum called S3-XO Net began at Fort Leavenworth to connect the officers preparing for, currently engaged in, or having successfully completed the demanding jobs of battalion operations officer and executive officer. These examples provide background on the Army's professional forum development. This was one of the first official BCKS professional forums. In the following decade, BCKS grew to manage more than sixty forums and has attracted nearly 200,000 members which is approximately 20% of the Active, Reserve, and National Guard Soldiers currently serving in the United States Army.[64]

The Center for Company-level Leaders (CCL) is the product of companycommand.com and is independent of, but works in conjunction with, BCKS. It is a comprehensive site devoted to full exploitation of the knowledge developed by company level leaders and goes beyond the original scope of the companycommand.com. This community of practice as well as S3-XO Net

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[63] The Center For Army Lessons Learned, "BCKS History," http://usacac.army.mil/cac2/AOKM//History.asp; Internet; Accessed 12 April 2011.
[64] *Ibid.*

are appropriate venues to analyze for the purposes of this paper. The S3-XO net is one of 60

professional forums managed by BCKS. It is designed for field grade officers in the rank of

Major and Lieutenant Colonel and the CCL focuses on company grade officers in the grade of

Lieutenant and Captain. Both of these forums are accessible by individuals who have an Army

Knowledge Online (AKO) password. Every soldier in the Army is required to have an account

and email address through AKO and it is the website in which all official, unclassified

information is passed to soldiers. This provides an adequate level of protection from unwanted

visitors on these sites.

ARMY COMMUNITIES OF PRACTICE

The foundational principle of this professional forum is that the "cutting-edge knowledge

of the Army resides in the minds of leaders at the tip of the spear-leaders in the experience right

now."[65] Bringing these leaders together and linking them to those who will replace them to

transfer that knowledge is what this forum attempts to achieve. It works to achieve this by

providing two secure forums called companycommand.army.mil and platoonleader.army.mil and

a small team to act as a catalyst for knowledge management. This team works to package much

of the knowledge shared on these communities into products that are functional for the members

of the forum.

Knowledge creation in CCL is completely voluntary, no leader is forced to share their

knowledge with the forum. However, knowledge creation is not limited to leaders joining the

network and contributing their ideas by typing or recording video content and downloading it to

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[65] Center for Company-level Leaders (CCL) Website,
http://companycommand.army.mil/aboutccl/aboutCCL.htm; Internet; Accessed 12 April 2011.

the forum. In 2007, CCL launched a knowledge collection effort when it sent individuals to Iraq and Afghanistan to gather information from company commanders in combat with the purpose of packaging this knowledge for publication. This is a similar technique that the Army's CALL has used in many operational environments.

S3-XO Net is an Army professional forum that provides a platform for past, present, and future battalion and brigade operations and executive officers to share their experiences and learn from others. It is one of many positionally focused professional forums that the Army officially sponsors. Like other positional professional forums, it has a civilian contractor as a moderator who helps manage the forum. Every two weeks the moderator sends an email update to members of the forum highlighting recent additions and current topics. This site allows members to add information, video, or audio files. It also has ways to begin a discussion or blog about a topic. The forum moderator has used such methods as sponsoring a "tools drive" to generate new content. The moderator sends out a request for tools (techniques or processes), documents, or written standard operating procedures for different types of units to download and share with the members of the forum.[66]

These two forums are intended to provide a platform for officers of various specialties who want or need information about a specific type of leadership position. The Army is made up of approximately twenty different operational branches such as Field Artillery, Infantry, Engineer, Adjutant General, Logistics, and Medical Service to name a few. Because of the Army's organizational framework, leaders in each of these specialties can become company commanders or S3/XOs for their particular branch. This is an example of a community of practice that is centered on a positional platform where an Artillery S3 can share experiences

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[66] I am currently, and have been for the last 6 months, a member of the S3/XO net, Leader net, and more recently company command forum. I have personally experienced the processes of these professional forums. Their processes and procedures are not evidently chronicled.

with an Armor S3. There are other communities of practice that are focused on the specialties themselves such as the Fires Warfighter Forum for Field Artilleryman of all ranks and positions. The focus in this forum is centered on a professional discipline platform. An Artillery company commander can post information concerning fire direction challenges and have an Artillery Lieutenant Colonel reply. Another type of professional forum exists that centers on a specific topic itself. All types of positions, specialties and ranks can comment and add to the discussion on these forums. An example of this type of forum is Counter-IED (Improved Explosive Device) Net. The topic of how to counter these deadly devices is important to all Army units and individual Soldiers and can draw input from anyone with a good idea on the topic. These three types of platforms are similar in the information that they seek but different in the types of group members that they are geared for.

These examples of the Army's relatively new platforms designed to manage organizational knowledge and facilitate knowledge transfer within the organization are a good start to answering the Army's challenge to harness the Army Soldier's wealth of experience. However, creating the tools is only the beginning to effective implementation. Unless soldiers know about these tools and how to use them, they will be under-utilized and will not reach their desired potential. The Army has initiated the education of the force on basic knowledge management through its first doctrine manual on knowledge management. The Army issued Knowledge Management Doctrine in August, 2008 in Field Manual (FM) 6-01.1. This manual's main purpose is to provide initial guidance to the Army's early attempts to create Knowledge Management sections within Army units. However, it highlights much of the Army's purpose for pursuing organizational knowledge management and why it views individual knowledge management as being important. It does not directly address how individual soldiers can use the

Army's created knowledge management platforms but it does provide organizational guidance that can be helpful to individual Soldiers.

The Knowledge Management FM 6-01.1 primarily focuses its guidance and attention on the Knowledge Management section of soldiers whose job it is to facilitate knowledge management in the unit and implement a knowledge management solution into unit command and control systems and operations.[67] The FM acknowledges that individual Soldier learning occurs in these processes; however, it is not the focus of the doctrine contained in the FM. In chapter three of FM 6-01.1, it discusses process and activities for effective knowledge management. The process for effective unit knowledge management is to assess knowledge needs, design a method for answering the information requirement or knowledge needs, develop a solution from the knowledge obtained, test the solution that was built, and implement the final solution. This is a process for units to utilize in order to better their organizational procedures; however, it is possible to utilize this basic design for individual learning. This FM could have devoted a portion to the individual soldier to guide them to identify their own knowledge management needs and to utilize knowledge management processes to find the knowledge that they need and to implement solutions that they create through these platforms.

CHAPTER 4: APPLICABILITY OF KNOWLEDGE MANAGEMENT AND COMMUNITIES OF PRACTICE IN THE ALDS

Through the ALDS, the ALC, and various memorandums the Army has clearly identified that it plans to enhance its leader development strategy. The Army has been very clear that it

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[67] United States, Department of Defense, FM 6-01.1. *Knowledge Management.* Washington: Government Printing Office, 2008, 3-8.

will achieve better balance of the three pillars of leader development. It is clear in its vision for a leader development strategy that harnesses the depth of knowledge that its current leaders possess and leverages that knowledge for the benefit of the whole Army. It has been equally clear in its emphasis that leader development must continue beyond the classroom and become a practice of self-development and lifelong learning. These issues will not fully find their solutions in the three pillars of leader development identified in the ALDS. The academic research and analysis on knowledge management provides evidence that the communities of practice can and should be a tool in both professional development and leader development systems.

This chapter will explore the academic evidence that first analyzes knowledge generation/creation and effective knowledge transfer. It will discuss the applicability of this research to the Army's current platforms and discusses how these Army platforms can achieve the Army's goal to harness the knowledge that its leaders possess. It will also link this ability for knowledge creation to the Chief of Staff's request for senior Army leaders to share their lessons learned from past experiences with the rest of the Army's leaders. Next, this chapter will provide evidence that supports the direct link between communities of practice and professional development. This will provide the basis for the argument that communities of practice can and should be an important aspect of the ALDS. It will discuss how the communities of practice can mesh together the three pillars of leader development and provide the common method for Officers to pursue lifelong learning and professional self development that is limited in the three pillars alone. This analysis will show that these communities of practice can and should be identified as part of the Army's leader development strategy.

HARNESSING ARMY LEADER'S KNOWLEDGE

The Army Chief of Staff has called on the Army to effectively aggregate the knowledge of its combat experienced leaders for the benefit of the entire organization. In order to effectively harness the knowledge that today's Army leaders have accumulated in their extensive combat operational experience, it is important to explore knowledge creation, transfer, and management. This paper has already identified the platforms that the Army uses to manage its organizational knowledge, both historical and new. This section will analyze the academic and defense research that is available to better understand how it relates to the Army's effective use of its knowledge management platforms. The application of this academic research will support the recommendations that this paper proposes in the final chapter.

Effective knowledge creation for organizational use is a deliberate process. Schirmer presents in the Rand study of Unit Leader Development that Senior Leaders do actively share information but that the information is not widely disseminated.[68] The United States Army is an enormous organization of nearly a million uniformed personnel. Much of our Senior Leader's knowledge is applicable to large portions of this organization. It is desirable to share expert knowledge with the rest of the organization. The historical platforms are extremely deliberate as in the process of publishing articles. Communities of practice provide a more informal way for Senior Leaders to share their expertise on specific topics or to specific groups of people. The different types of platforms provide this opportunity and the Army values this opportunity as identified by GEN Casey's call for Senior Leaders to "take time during reset to reflect, analyze, write down and share lessons from personal experiences with peers and subordinates."[69]

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[68] Peter Schirmer, *Leader Development in Army Units...66.*
[69] GEN George W. Casey Jr., "Army Training …6.

In order for the Army's knowledge management program to be effective in leader development, it needs to harness the Army's best information. The quality, quantity and breadth of knowledge shared in the Army knowledge management database is directly proportional to the quality of leader development that leaders will experience who pursue self-development inside this database. This makes process of knowledge creation very important to the Army. Argote, McEvily and Reagans provide important information on the process of knowledge creation. They create a framework that helps to analyze the Army's knowledge management system with the three steps that they present: ability, motivation, and opportunity to create knowledge and add it to the organization knowledge database.[70] Success in the first aspect, ability to create knowledge and add it to the organization's database, is directly related to the quality of training in knowledge creation. The type of training that it is important is the actual training of individuals on how to access and effectively transcribe the lessons learned that they feel the organization will benefit from into the applicable professional forum or community of practice. Schirmer's research adds to this analysis with an example of how the Army's educational institutions can affect real change in the culture of the organization. Schirmer gives the example of After Action Reviews (AAR) becoming commonplace, a part of the Army culture. This phenomenon occurred when AARs were introduced and taught at the Combat Training Centers. Their conclusion is that when a process is taught and implemented in a training environment, if it has value in the profession it will become part of the culture.[71] It can then be deduced that if the Army's educational institutions thoroughly train individuals on the processes of adding their knowledge to the Army's database through its developed platforms, Army leaders will have a better ability to add knowledge.

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[70] Linda Argote, "Managing Knowledge…575.
[71] Peter Schirmer, *Leader Development in Army Units…64.*

This logic also follows with motivation. The Army officers who Schirmer says would demand AARs if not given the opportunity are not doing so simply because the Army has made it a habit for them. They would demand such because they understand it and it gives them value in their profession. They are motivated to achieve the learning that occurs from a good AAR. Therefore, if the knowledge management platforms that they are adding their knowledge to are well-utilized by others and give them valuable knowledge back, they will desire to continue this lifelong process of sharing knowledge through this platform. Argote discusses other types of motivation to create knowledge; however, this reward and incentive program may not go over well in the Army. The Rand study indicated that attempts to formalize other types of leader development were extremely unpopular among the officers that they surveyed. Any type of new forms or reporting requirements were not popular and the study concluded these would unlikely be successful or beneficial.[72]

Finally, the opportunity to add knowledge to the organization's database is a critical aspect of the Army's successful knowledge management program. The idea of opportunity does not just mean having the platform available for anyone in the Army to access. The opportunity more practically means the Army must identify appropriate time for Army leaders to physically add their knowledge to the database. AARs have been a success in the Army in part because at every important juncture, the Army includes time for the unit to conduct an AAR. They actually spend the time to analyze what was supposed to happen in the specific event, what did happen, and why it happened. From this process, the Army could teach that the next step is to capture individual lessons learned and share them on the appropriate community of practice. Ewest acknowledges the importance of this step and calls it "changing the knowledge flow."[73] Ewest

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[72] *Ibid.,* 63.
[73] Ewest, Timothy, "Knowledge Management…139.

directly links the ability to change the knowledge flow, or whether knowledge in an organization

can reach the desired location (i.e. community of practice or database) with knowledge

management success.

Mitchell and Tse identify these processes as "explicit knowledge-sharing routines" and

link its success to different types of leadership styles.[74] Specifically they identify that leaders that

demonstrate a transformational leadership style have certain qualities that facilitate the

knowledge-creation process. Transformational leadership, as described by Peter Northouse, is a

leadership process that changes and transforms people.[75] He goes on to say that it "is concerned

with … standards and long-term goals and includes assessing followers' motives satisfying their

needs and treating them as full human beings."[76] Transformational leadership has to do with

getting followers to feel ownership and responsibility in the success of the organization. It

differs from other types of leadership styles that rely on rewards, incentives, or punishments to

get members of the organization to accomplish desired tasks. Transformational leadership seeks

not to only get members to achieve tasks, it seeks to make them want to achieve those tasks

better.[77] These attributes are what Mitchell and Tse identify as being conducive to promoting the

knowledge-creation process.

The US definition of leadership specifically identifies that along with influencing people

to accomplish the mission, leadership aims at also simultaneously improving the organization.

The leader must facilitate the Army's mission accomplishment in a manner that makes and more

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[74] Rebecca Mitchell, "A Theoretical Model…84.
[75] Peter G. Northouse, *Leadership: Theory and Practice, Fourth Edition,* (Thousand Oaks: Sage Publications, 2007), 175.
[76] *Ibid*.
[77] Canada. Department of National Defence. *Leadership in the Canadian Forces : Conceptual Foundations*. Ottawa: DND Canada, 2005.

importantly, leaves the organization a better one.[78] This statement about leadership describes

another aspect of transformational leadership and indirectly links a responsibility for its leaders

to enhance knowledge creation in their units thus broadening the organization's knowledge.

Army leaders need to understand transformational leadership and how it positively enhances

knowledge creation.

For these processes to effectively harness soldier's knowledge, leaders must have an

awareness of when an experience has created a lesson or knowledge that could benefit others,

elsewhere in the organization. Guthrie and Van Velsor acknowledge that leaders frequently do

not identify when they or their subordinates have knowledge to share. Their research indicates

that leaders commonly think about learning as only occurring in the classroom.[79] Extracting

lessons from experiences is something that the Army will need to inculcate in the mindset of its

leaders at all levels to ensure effective knowledge creation, transfer, and management.

In Dalton's discussion about knowledge transfer, he acknowledges that knowledge

creation in a military environment often must happen quickly for those receiving the knowledge

to get the most value from it. Not all military knowledge that is shared is time sensitive but

when it is, leaders must be acutely aware of this and quickly enable the transfer of that

knowledge to a knowledge sharing platform. Effective organization of the information contained

in a knowledge management platform will make it easiest to retrieve for the individual who

needs it. Most importantly, Dalton found that military leaders had experienced that communities

of practice provide a significant increase in the ability for new personnel to learn new

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[78] United States, Department of Defense, FM 6-22, *Army Leadership,* Washington: Government Printing Office, 2006, 1-1.
   [79] Victoria A. Guthrie, "Enhancing the Ability…253

responsibilities because they provide "access to relevant, knowledgeable and experienced online subject matter experts and mentors."[80]

Mahar's research is important to this study because it first identifies that organizations with knowledge management strategies are mostly using online forms of communities of practice as their primary means or centerpiece of the knowledge management strategy.[81] Mahar's study covers many areas but the area that is important for the Army to understand deals with member contribution. The first point seems evident in that the higher the price a knowledge contributor has to pay to contribute, the less that individual will contribute. The other conclusion was that the lower the benefit to contributors, the less they contributed. These findings may seem self-evident and the first actually deals with monetary cost of contributing but they also bring up quality issues that are important to the quality of knowledge creation. First, when discussing the cost of contributing, one can deduce from Mahar's findings that other costs would also reduce the level of contribution. For instance, the more difficult and time consuming it is to access and perform the actual contribution of data to the community of practice, the less members will contribute. In the case of the Army's online communities of practice, many are member access only and are actually relatively difficult to get into and to find exactly where on the site one can contribute their information. The historic method of contributing knowledge was through the writing of professional articles to publish in military journals. This process is time consuming and difficult and did not lend to a large quantity of knowledge sharing in the Army organization. Second, the more that a member benefits from the information in a community of practice, the more that member will contribute in return. This may be a difficult variable to control but the Army can work toward making the use of communities of practice more widely utilized in

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[80] R.A. Dalton, *Knowledge Transfer for the Military Leader...*5.
[81] Gerald Mahar, "Factors Affecting Participation…1.

training, education institutions, and in operational units so that members can identify its benefits more readily.

Communities of practice will not be as effective as they can be and the Army's management of its extensive knowledge base will not realize the benefits that it might if the Army does not effectively design a system that overcomes the issues identified in this section. Harnessing knowledge must be a leader-led process that is continual and integrated into the routines of the Army's units and leaders.

LEVERAGING KNOWLEDGE FOR ARMY LEADER DEVELOPMENT

The Army's commitment to leader development is extensive and continual. As Snider points out, all professions have a responsibility to develop their own professionals. The Army states that it will do this primarily through the three pillars of leader development which are training, operational experience, and education. The Army has also acknowledged in the Army Learning Concept (ALC) that it desires to find a way to mesh the three pillars of leader development. The Chief of Staff of the Army and the ALDS both call for leaders to engage in self development and lifelong learning. The Army communities of practice that have been outlined in this paper provide an opportunity to accomplish all of these goals. This section will describe these elements and discuss the academic research on the link between communities of practice and professional development.

Self Development and Lifelong Learning

The Army's leader development program includes within its education pillar, successive military education levels that are educational experiences spread out to occur at specific times in an officer's career. In between the educational blocks, officers are assigned to operational units where they get training and experience in their current job. Snider notes that usually leader development occurs through formal education and mentorship by more experienced individuals. Antonakis et al' research concluded, in agreement with the Army's findings in the ALDS, that formal education is not sufficient by itself to provide junior leaders enough experience-based knowledge to make them effective in the execution of their complex duties.[82] Antonakis et al, as well as Byham, also identify mentorship as a key aspect of leader development. Byham acknowledges that a method for self development that leaders can and should use is to seek out a mentor to ask questions of and learn from.[83] Antonakis et al specifically draws a link between the level of practical knowledge that one can usually get from a mentor and the level of leadership expertise.

Communities of practice have the ability to transfer the practical knowledge that Antonakis et al identify through experienced mentors engaging in these communities of practice. Dalton identifies that communities of practice have the capability to "fill the knowledge gap between doctrine learned at schools and its practical application in a fast changing environment."[84] By regularly participating in various Army communities of practice, leaders can seek out mentors who can provide experience based knowledge to directly increase that leader's level of leadership expertise. This can occur at anytime in a leader's career, not just when he or she is assigned to an educational block or in an operational unit.

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[82] John Antonakis, "Practical Intelligence and Leadership…214.
[83] William C. Byham, *Grow Your Own Leader…242.*
[84] R.A. Dalton, *Knowledge Transfer for the Military Leader…5.*

A leader's need for knowledge about specific subjects can occur at anytime in their career. Officer leaders specifically get assigned to a wide range of assignments in their career. It is not uncommon to be assigned to an administrative or training assignment in between operational assignments. During this time, officers will have particular developmental requirements that they will need to fulfill in order to be sufficiently prepared for their next operational assignment. The process of seeking an online mentor or querying for specific knowledge in the database is a function that the online communities of practice provide. This is a process that the three pillars of leader development do not readily provide and is in direct alignment with the call for a process for lifelong learning.

The Army's desire to mesh the three pillars of leader development outlined in its ALC is important to the success of communities of practice and can be fulfilled by these communities of practice. Army officers, whether they are engaging in academic work in a formal education setting, training with their unit, or conducting operational assignments with their unit, can access communities of practice. The success of communities of practice requires officers to share their insights during every pillar of the development process in order to gain the best variety of knowledge possible. When an officer learns an effective technique that is directly applicable to effective execution of responsibilities as a company commander, that officer needs to access the company command community of practice and share that knowledge. This needs to happen wherever the officer is currently assigned. By having officers in school, training, or on operations all contributing to the organization knowledge database, it increases the breadth of knowledge in that specific area. Those officers in school are learning things in a different way than the officers who are on operations experiencing these techniques and problems. This process spans the boundaries of an officer's immediate environment. As Schirmer points out in

the Rand Study, officers typically only share knowledge with the colleagues and subordinates in their immediate vicinity. This method provides various points of view to the entire community. This truly meshes the process that occurs in all three leader development pillars in an effective way.

CHAPTER 5: RECOMMENDATIONS AND CONCLUSION

This paper has provided an extensive review of the Army's leader development program and the current requirements that the Army's three pillars of leader development do not sufficiently address. It has conducted an analysis of the communities of practice platforms that the Army has created to date, and reviewed the academic analysis of successful knowledge management. Finally, it has utilized this academic research to analyze the linkage between knowledge management and professional development of Army Leaders. This analysis included an explanation of the way that communities of practice can be an effective element of the Army leader development program. The following recommendations, drawn from the research included in this paper, can facilitate the Army's campaign to build an effective knowledge management program and leverage this program to enhance its leader development program.

The Army has already published a doctrine manual that is designed to guide the actions of the knowledge management sections that are developing in operational unit staff elements. In this manual, it identifies the process that guides knowledge flow in an organization. The Army should modify this model and adapt it to individual leader development. If an Army unit can assess its performance in any given area and identify its knowledge deficiency, Army leaders can and currently do assess themselves in much the same way. The same is true for all of the other

steps (design, develop, pilot, and implement) in the knowledge management process model.

This adapted model should be included in the ALDS and in Army FM 6-22, *Leadership*, as a

method for achieving self development and as a process for lifelong learning. The Army should

highlight that there are many ways for leaders to retrieve the knowledge that they have assessed,

that they are deficient in, but that no matter where they are, communities of practice are available

to facilitate the acquisition of practical knowledge.

In order to make the communities of practice effective, they have to achieve a wealth of

knowledge to transfer. The Army must analyze first how it trains it leaders in the actual process

of identifying lessons learned, and second the submission of those lessons learned into the

communities of practice. The research that the Rand Corporation completed indicates that this

can be successfully accomplished if the Army's training institution embraces this process

throughout its training regime. If the Army Training and Doctrine Command (TRADOC)

embraces the process of regularly submitting lessons learned to relevant communities of practice

and searching these communities of practice for desired knowledge, evidence shows that the

Army culture can change to fully understand, embrace, and institutionalize these procedures.

Within this process, the Army must include in its training of its leaders at the earliest time

in their careers, the lessons concerning the leader's role in knowledge creation. This paper

identified that the transformational leader style is most conducive to facilitating an environment

that best supports the knowledge creation and transfer process. These aspects of leadership need

to be explained to leaders in the earliest years of their leader development experience and

reinforced throughout the military education levels. As leaders grow and assume more

responsibility, the nature of their relationship with the knowledge management process will grow

and change as well. Leaders at all levels have to make knowledge management a priority in

order for it to fully achieve its desired effect. Otherwise, there will be significant gaps in the program.

The Army's current communities of practice are not all located at the same access point on the internet and do not have oversight by one agency. This creates inefficiencies in its knowledge management system since the successes that one community might experience in procedure or other aspect of performance are not readily shared with other communities. As an officer moves from one position to another, or one type of unit to a different type of unit, the subject of the community of practice that he or she is a member of will change requiring the officer to seek out the next applicable community. Centralizing Army communities of practice will better facilitate movement from one topic to another. This also leads to optimal searching of the different communities of practice. Officers have identified that it is not currently possible to effectively query information within the Army's organizational knowledge database (a conglomeration of all knowledge contained in the communities of practice). The Army will need to provide an effective way for Army leaders to query the database to quickly obtain knowledge that others have already shared.[85]

In its analysis of the physical structure and location of these communities of practice, it needs to create as much standardization as possible in the process of submitting lessons learned into the database as possible. This standardization should also focus on simplifying the process to reduce the difficulty, or price of, contribution thus increasing the amount of knowledge that members will contribute. This is important because the diversity of jobs that an Army officer serves in over a career are numerous which will cause the officer to have information to share in many different forum subject areas.

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[85] This information was obtained by the author from a meeting with a current US Army Battalion Commander who discussed this issue with his classmates at the Army's Pre-Command Course for Battalion Commanders on 22 April 2011.

These recommendations are all aspects of the knowledge management process that the Army needs to improve in order to best harness, transfer, and exploit the quality knowledge that its officers possess. These recommendations are derived from both the academic research utilized in this study and the experiences of the author. They represent the most significant deficiencies, not an exhaustive list, in the current Army knowledge management system.

Conclusion

In conclusion, the Army has identified that it desires to harness the knowledge that its officers possess and leverage that knowledge to benefit the entire organization. This will be increasingly important as the Army faces an increasingly complex future operating environment as identified in the Army Capstone Concept. Leaders at lower levels than in the past are being given more complex and critical responsibilities. The Army knows that it must best prepare these leaders for these complex responsibilities. It has identified that it desires to enhance the leader development process by establishing a development system that fosters self-development and lifelong learning to complement the core pillars of experience, training, and operational experience. It has been developing for approximately the last five years a conglomeration of professional forums or communities of practice to link the Soldiers and leaders of the Army in effective and efficient ways so that they can learn from each other and share their knowledge with the entire organization. The Army has begun to develop guidance and doctrine relating to knowledge management but has not extended this guidance to the individual leader level. This paper has provided an argument to link those communities of practice to the discipline of leader development and provide recommendations as to how the Army can effectively leverage

communities of practice to fulfill the requirements identified in the ALC and ALDS. It has also provided evidence that supports the argument that communities of practice can effectively aggregate knowledge and harness expert knowledge. They can transfer that expert knowledge to leaders who desire and need that expertise to enhance their leadership expertise. This paper is relevant to all Army officers in their pursuit to understand the profession and how to develop themselves as professionals. It is also useful as a reference to anyone studying the effective uses of professional forums or communities of practice.

Further research should focus on the specific attributes of online communities of practice such as best practices in website structure and querying processes. It is important to conduct further study on the techniques that will best facilitate officer use of professional forums to guide TRADOC in the process of educating officers on the most effective use of knowledge management systems for leader development. The Army would benefit from a study of the most effective techniques in professional forum moderation and the moderator's ability to best exploit the quality information that members share. Another topic for further research is the process that the Army currently uses to formalize its published doctrine. Communities of practice can play a part in the formalization of doctrine but more research needs to be done on how the Army will conduct quality control and assimilation of knowledge shared in communities of practice and professional forums. Finally, the Army should continue to analyze the successes in its various professional forums and capitalize on these to effectively implement them throughout its forums.

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