ENABLING SECURITY, STABILITY, TRANSITION, AND RECONSTRUCTION OPERATIONS THROUGH KNOWLEDGE MANAGEMENT

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Enabling Security, Stability, Transition, and Reconstruction Operations through Knowledge Management

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Knowledge Management, SSTR, Organizational Culture

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ABSTRACT

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The challenges inherent in today’s strategic environment amplify the criticality for adaptive and responsive leadership and organizations. Globalization and rapidly diffused information flows tighten global interconnectedness and create the expectation for near instantaneous and decisive action. Strategic leaders face demands for effective and timely analysis and decision-making that juxtapose a host of ill-structured or wicked problems. These unique, crosscutting, and interactively complex problems often require perpetual sets of neither correct nor incorrect cascading solutions. Additionally, leaders and organizations face an external environment characterized as volatile, complex, uncertain and ambiguous (VCUA). It is an environment requiring innovation, accelerated transformation, pervasive sensing and continual learning. In essence, tumultuousness prevails. The VCUA environment drives rapid external and internal change, decision and resource demands, and evolving missions and strategic foci as leaders and organizations attempt to shape, influence, adapt and respond.

The post-conflict Security, Stability, Transition, and Reconstruction (SSTR) efforts in Iraq and Afghanistan typify strategic operations in tumultuous and VCUA external environments. Compounding the substantive challenges inherent in this environment, however, is an equally complex internal environment comprised of multiple organizations collectively responsible for the SSTR mission. As outlined in National Security Presidential Directive-44 (NSPD-44), the Secretary of State has overall responsibility for coordinating, leading and integrating U.S. SSTR efforts across all “U.S. Departments and Agencies with relevant capabilities” and also those of the
nation’s coalition partners. Specific to the U.S. alone and although situationally dependent, these organizations may encompass the Departments of Defense, Treasury, Energy, Agriculture, Commerce, Health and Human Services, Transportation, and Homeland Security, among others. Accomplishing the SSTR mission, thus, requires collaboration, coordination, synchronization, and synthesized execution across an extremely complex network of responsible organizations with differing values, cultures, norms, technologies, policies and goals. Additionally, in-theater organizations characterized by discontinuous membership exacerbate internal challenges through inconsistent ebbs and flows of information, situational awareness, and, most importantly, experience-derived knowledge. Collectively, this complex multi-organizational construct must effectively address a myriad of SSTR requirements and wicked problems that transcend organizational hierarchies and authorities.

Addressing ill-structured or wicked problems in the context of SSTR efforts requires that the network of responsible organizations build sufficient collaborative and SSTR-specific long-term problem solving capacity. Building this capacity, in turn, necessitates that leaders and organizations within the network create, acquire or draw upon, and add to a collective SSTR knowledge base through learning. Learning occurs by attempting to structure or address SSTR problems; namely, the “designing” cognitive function of operational art. Learning also occurs by assessing decision or solution implementation and adjusting based on outcomes. Overall, however, the complex problems themselves often become “the main objects to be dealt with and the driving force behind knowledge acquisition.” A growing knowledge base, thus, is critical to generating new ideas and fostering innovation and creativity required to address or
structure other, emerging, or future SSTR problems. In essence, the knowledge created or acquired through addressing SSTR wicked problems becomes the very resource required to continue effectively doing so.

The efforts by the United States and Coalition partners in Iraq and Afghanistan clearly demonstrate that collaboration, organizational learning, and knowledge sharing are essential elements of post-conflict Security, Stability, Transition and Reconstruction Operations (SSTRO). Specifically, knowledge created and shared within and among responsible organizations enables timely and effective problem solving, decision-making, adaptivity and responsiveness critical to successful SSTRO in VCUA post-conflict environments. As such, knowledge management provides a key strategic SSTRO enabler. Organizational culture, however, poses a major barrier to effective knowledge management employment within and across the U.S. Department of Defense (DOD) and interagency organizations.

The analysis provided herein explores Knowledge Management as a strategic SSTRO enabler and specifically examines the efforts of the Combined Security Transition Command-Afghanistan (CSTC-A) using the Intelligent Complex Adaptive System (ICAS) Model of Knowledge Management. The ICAS model describes how Knowledge Management creates the organizational intelligence necessary for effective and efficient response to the environments characteristic of SSTRO. Accordingly, applying the ICAS model demonstrates the strategic utility of Knowledge Management for SSTRO-tasked DOD and interagency organizations. Implementing Knowledge Management to achieve strategic success, however, necessitates overcoming prohibitive cultural barriers. Considering this, the analysis provided herein also explores
organizational culture as a barrier to knowledge management implementation and use and includes focus areas for overcoming culture-centric obstacles. Finally, the analysis concludes with three recommendations centered on realizing the strategic utility of KM as part of SSTRO and in achieving national security objectives overall.

Analytical Precursors – Learning Organizations and Organizational Knowledge

Successfully accomplishing the SSTR mission necessitates unity of action and effort. The multi-organizational network must effectively function as a whole in addressing SSTRO challenges presented by the external VCUA environment, as well as the wicked problems inherent in the overall SSTR mission. An integral component in achieving this strategic end-state is to establish an internal environment that has the capability and capacity to do so. This is largely possible given three organizational mandates. First, organizations within the network must value collective knowledge creation, sharing, acquisition, and application. Second, organizations within the network must understand how their actions affect both the external and internal environments. Finally, organizations within the network must not only recognize requirements for change, but also have the capacity to effectively and intelligently change based on internal and external drivers. In this context, two critical enabling concepts emerge, specifically Learning Organizations and Knowledge Management. Although the focus of this analysis is on Knowledge Management (KM) as a strategic SSTRO enabler, Learning Organizations and Knowledge Management are synergistic and mutually supportive. Further, Learning Organizations posses or develop a culture of learning, which is a knowledge-centric endeavor, and organizational culture is a significant determinant of KM success. As such, briefly exploring certain key aspects of Learning
Organizations as an enabling component of the internal SSTRO environment, as well as KM success, provides a worthwhile backdrop for the follow-on KM analysis herein.

Harvard Business School professor David Garvin (1998) defines a learning organization as “an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights.”

In the context of SSTRO and KM, developing a network of learning organizations will help create the required internal environment previously described from three perspectives. First, learning organizations are knowledge-centric and value the creation and sharing of knowledge; learning becomes an important aspect of the overall organizational culture, which, in turn, affects effective KM implementation and use.

Second, learning organizations utilize a systems thinking approach to understand decision and action implications. Organizational and network knowledge is an essential component of systems thinking as it assists in understanding complexity and recognizing high-leverage change. Accordingly, a systems thinking focus has the potential to significantly improve decision-making. Finally, learning organizations seek to adapt or change, including organizational behavior or structure if required, based on the effectiveness of their actions. Faced with an external VCUA environment, adaptivity and agility increase organizational effectiveness and responsiveness. In a complex internal environment, adaptivity and agility better position organizations to embrace change, such as that associated with KM implementation and use.

Exploring Knowledge Management (KM) as a strategic enabler for SSTRO also requires understanding the concept of knowledge in organizations. Thomas Davenport and Laurence Prusak (1998) define knowledge as follows:
Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.\textsuperscript{17}

There is an intuitive understanding that knowledge goes beyond data and information—a type of hierarchy or continuum that builds or moves from data to information to knowledge. Data represents “discrete, objective facts about events.”\textsuperscript{18} Although organizationally valuable, data by itself has no meaning. Conversely, adding meaning or value to data, through contextualization, categorization, calculation, correction, and/or condensation, transforms data into information.\textsuperscript{19} Information provides increased organizational value over data, and organizations invest heavily in processes and technology tools dedicated to information management. Similar to information, knowledge has meaning, but despite frequent interchangeable use, information and knowledge are not the same. Unlike information, knowledge “is about beliefs and commitment” and “is a function of a particular stance, perspective, or intention.”\textsuperscript{20} Also unlike information, knowledge is closer to action; the final intellectual asset required for planning or implementing solutions to problems.\textsuperscript{21}

Organizationally, knowledge tacitly or explicitly derives from information through individuals or groups as either a manageable process or asset.\textsuperscript{22} Tacit knowledge, which has both technical and cognitive dimensions, is personal, contextual, non-tangible, or typically within the mind of the knower such as “know-how”, mental models, heuristics, intuition, innate intelligence or the ability to reason.\textsuperscript{23} Tacit knowledge predominantly derives from experience and practice, and is a resource that improves the speed and effectiveness of decision-making and problem solving. Explicit
knowledge, on the other hand, is systematic, formal and something expressible, capable of codification, or documentable in some form of media.\textsuperscript{24} Tacit and explicit knowledge, however, do not exist as separate or discreet entities within organizations. According to pioneering experts within the field of organizational knowledge, Ikujiro Nonaka and Hirotaka Takeuchi, tacit and explicit knowledge interact, known as organizational knowledge creation, through four modes of “knowledge conversion” referred to as Socialization (tacit to tacit), Externalization (tacit to explicit), Combination (explicit to explicit), and Internalization (explicit to tacit)—the SECI model.\textsuperscript{25}

**Knowledge Management as a Strategic Enabler**

Increasingly over the past decade, the concept and practice of Knowledge Management as a mechanism to improve organizational performance pervades organizational literature and focus.\textsuperscript{26} In general, KM encompasses the “capture and/or creation, sharing and dissemination, and acquisition and application” of knowledge.\textsuperscript{27} Practitioners view knowledge as an increasingly valuable in-tangible commodity due, in large part, to pioneering works by authors such as Peter Drucker who, in 1993, introduced knowledge and the “knowledge worker” as the “basic economic resource” of society.\textsuperscript{28} However, a majority of KM research, investment and application generally occurs within the private sector (one exception being the U.S. military) where the value of KM includes increased innovativeness, better decision-making, reduced costs, and faster responsiveness.\textsuperscript{29} Today, the private sector predominantly views KM as critical to increasing the “capacity to integrate and apply distributed knowledge to create agility, responsiveness, and adaptivity” in a complex and uncertain business environment.\textsuperscript{30} It is a business environment characterized by the geographically unconstrained transfer
and exchange of capital, products, services, information, and knowledge throughout a
global network of independent and interdependent firms, enterprises, and consumers.
Within the private sector, thus, KM delivers a sustainable competitive advantage critical
to meeting the demands and challenges of an interconnected, complex and uncertain
globalized business environment.  

Contextually, the strategic value of KM within the public sector parallels that of
the private sector albeit not profit or competition-driven. Explicit and tacit knowledge
within the public sector is equally, if not more, important as public sector organizations
are primarily knowledge-intensive. As such, numerous public sector organizations
were early to adopt and continue to leverage KM as a strategic enabler. Many U.S.
federal agencies, such as the DOD, have well established KM technologies, tools and
programs geared toward managing a vast array of data and information. One of the
most recognized in KM literature is the U.S. Army’s After Action Review (AAR) and
Center for Army Lessons Learned (CALL) programs. Leveraging the success and
effectiveness of CALL and other programs, the Army is increasing its focus on KM. In
July 2008, the Chief of Staff and Secretary of the Army jointly issued a memorandum
promulgating the Army’s 12 Knowledge Management Principles as a “first step” toward
developing an “enterprise approach” to KM from the “cultural, process change, and
technical” perspectives. Other well-recognized programs within DOD include the U.S.
military knowledge portals such as Army Knowledge Online (AKO), Navy Knowledge
Online (NKO), and Defense Knowledge Online (DKO) that provide information,
communication, collaboration, decision support, education, and training environments
for a globally distributed workforce. In addition to portals, the U.S. military is
leveraging KM communities of practice to increase collaboration, build expertise, expedite information flow, and improve decision-making and problem solving.\textsuperscript{37} The Air Force Material Command (AFMC) pioneered KM within the Air Force (AF) promoting communities of practice as a “key technique across the AF.”\textsuperscript{38} These DOD uses of KM are by no means comprehensive and represent only a few examples. Overall, DOD KM techniques, tools, and practices span a full range of functions including acquisition, intelligence, logistics, and operations with current and future trends moving toward Joint and “cross-service integration.”\textsuperscript{39}

Within the U.S. public sector, the horrific terrorist attacks of September 11, 2001, represent the most poignant lesson in the criticality of government knowledge management and coordinated action.\textsuperscript{40} The lessons learned from these attacks resulted in President George W. Bush establishing the Department of Homeland Security (DHS) to rectify critical knowledge sharing and coordination gaps.\textsuperscript{41} More recently, knowledge management is receiving a renewed National Security and interagency strategic focus as lessons emerge from the significant security and stability challenges faced in Iraq and Afghanistan. An April 2008 RAND SSTR study regarding U.S. civilian personnel identifies KM as a critical component for driving “continuous performance improvement by identifying and addressing gaps in effective leadership and implementing and maintaining programs that capture organizational knowledge and promote learning.”\textsuperscript{42} Additionally, in November 2008 the Project on National Security Reform identified “enhancing knowledge management across all components of the national security system” as a core reform.\textsuperscript{43} As evidenced by the relatively recent focus
on KM at the national strategic level, KM is receiving increasing recognition as a strategic enabler across the spectrum of U.S. public sector activities.

Aside from the military element of national power, within the public sector realm there is a primary focus on addressing or managing social or public problems, characterized as wicked, where knowledge is integral to structuring or understanding these problems.\textsuperscript{44} Specific to SSTRO, the problem sets faced by the multi-organizational network represent the full spectrum of public issues including political, economic, infrastructure, informational, social, humanitarian, and legal, often within societies marked by fledgling governance and reduced security. Regarding the security and stability aspects of SSTRO, U.S. Army doctrine recognizes KM as “key to understanding and exists to help commanders make informed, timely decisions despite the complexity inherent in stability operations.”\textsuperscript{45} A specific, present day manifestation is the focus Multi-National Corps-Iraq (MNC-I) is placing on KM as a critical enabling capability for operations in Iraq.\textsuperscript{46} However, the multi-organizational network responsible for SSTRO, which in many regards is similar to the complex networks found in the global business environment, must synergize efforts and actions across the spectrum of SSTRO given the wicked nature of problems faced. As such and given the spectrum of problems, KM use and focus must transcend only certain departments or organizations to the whole of U.S. government with SSTR capabilities and responsibilities.\textsuperscript{47} As articulated by the Chairman of the Joint Chiefs of Staff, even the success of future military operations “will require the integrated application of all the instruments of national power.”\textsuperscript{48} Derived tactical, operational, and strategic tacit and explicit knowledge within the SSTR network, thus, become critical dynamic strategic
resources that SSTR organizations and the network as a whole must manage. It is the accumulated, largely tacit knowledge that enables the expanding, shared SSTR knowledge base necessary for continuous collective learning, increased problem solving capacity, and improved responsiveness, adaptability, and decision-making.

Managing SSTRO knowledge as a resource within the multi-organizational network, however, presents three primary challenges. These challenges, though, are also the primary justifications for KM as a strategic enabler. First, tacit knowledge is difficult to capture, share, and if possible, make explicit; doing so takes focus and resources and is subject to individual and organizational cultural and social dynamics.\textsuperscript{49} However, the knowledge transfer speed and effectiveness required for responsiveness, adaptability and agility in complex and uncertain environments requires rapid and effective knowledge transfer and sharing.\textsuperscript{50} Rapid transfer and sharing must include both tacit and explicit knowledge, but realizing this strategic capability is significantly easier with explicit knowledge. Second, in a discontinuous member multi-organizational environment, individual tacit and explicit knowledge ebbs and flows as individuals rotate in and out of organizational positions within the network. Continually expanding and accessing the collective network’s knowledge, however, improves problem solving capacity, responsiveness, and decision-making.\textsuperscript{51} Finally, leveraging SSTRO capabilities from multiple, globally located organizations results in geographical and organizational knowledge dispersion. Further, organizations within the responsible network vary in technologies, size, structure, cultural values, policies and procedures.\textsuperscript{52} Effectively addressing SSTRO challenges and achieving unity of action and effort, however, requires effective knowledge sharing and collaboration throughout the multi-
organizational network. In this overall context, despite the significant challenges to KM implementation and use, KM represents a powerful strategic enabler for meeting the demands and challenges of SSTRO in a VCUA environment.

CSTC-A and the Intelligent Complex Adaptive System (ICAS) KM Model

Overall, the mission of the Combined Security Transition Command-Afghanistan (CSTC-A) is to “plan, program and implement structural, organizational, institutional and management reforms of the Afghanistan National Security Forces (ANSF)” in partnership with the Government of the Islamic Republic of Afghanistan and the international community. CSTC-A accomplishes its SSTRO mission through advisors, mentors and trainers to the Afghan Ministries of Defense and Interior, as well as an internal staff to manage the planning and programming efforts required to organize, man, train, equip, and build facilities for the ANSF. As a United States Central Command (USCENTCOM) organization, CSTC-A must coordinate its efforts with the NATO-led International Security Assistance Force (ISAF) and the U.S. Embassy. Understanding this, collaboration and knowledge sharing are essential to CSTC-A mission accomplishment.

Key components of the CSTC-A SSTRO mission are planning and programming for ANSF generation including manning, equipping, and building facilities. Shared responsibilities necessitate synchronization across U.S. and ISAF organizations to effectively train, field, and equip Afghan National Army (ANA) units and Afghan National Police (ANP) forces. Component members of the CSTC-A staff primarily accomplish assigned tasks through direct internal interaction with other members of the staff, as well as direct external interaction with corresponding component members of ISAF and
other U.S. organizations. Equipping the ANSF, for example, requires internal interaction between CSTC-A CJ7, CJ4, CJ8, CJ-Engineering, the CSTC-A Deputy Commanding Generals for ANA and ANP development, the CSTC-A Deputy Commanding General, and the CSTC-A Commanding General. Externally, ANSF equipping requires interactions with staff members from the ANA and ANP, Afghan Ministries of Defense and Interior, ISAF, the Defense Security Cooperation Agency (DSCA), U.S. Army G8, and USCENTCOM J4. Equipping the ANSF also requires periodic external interactions with the DOD Inspector General and the U.S. Congress Government Accountability Office (GAO) as part of their accountability and oversight functions. Due to the VCUA environment associated with SSTRO, the duration and extent of interactions is extremely dynamic and often varies depending on internally and externally driven changes to goals, policies, priorities, and strategic focus.

Viewed through a KM lens, the description of CSTC-A within its strategic and operational environment mirrors that of an Intelligent Complex Adaptive System (ICAS). As such, the ICAS KM model is useful in identifying the criticality of KM within the CSTC-A construct and specifically by using the five key processes within the model of “understanding, creating new ideas, solving problems, making decisions, and taking actions to achieve desired results.” CSTC-A performs these processes through continuously evolving interaction with key organizations and stakeholders. For example, CSTC-A purchases ANSF equipment through the DSCA and associated U.S. military service organizations as part of the Foreign Military Sales (FMS) program. As part of the CSTC-A CJ-4 equipping mission, an equipment procurement “sub-system” forms to address the full range of related activities. These activities include
identification of alternatives when specific equipment is unavailable or delivery schedules do not support operational and strategic requirements (creating new ideas and problem solving); signing Memorandums of Agreement (MOAs) based on equipment types and quantities being purchased (making decisions); and executing and monitoring contracts and delivery schedules (taking actions to achieve desired results). Shared knowledge is central to these processes as it represents the critical organizational or network resource that enables effective action in dynamic, complex and uncertain environments.\textsuperscript{57}

The equipping example described above represents one of many CSTC-A sub-systems formed to ensure mission accomplishment. However, using the ICAS KM model describes the adaptive nature of CSTC-A as staff “sub-systems” dynamically form and evolve to address SSTRO problems or issues. Internal and external organizational cooperation and collaboration are essential to achieving unity of action and effort. Among the challenges, however, is knowledge attenuation as members of the CSTC-A staff, as well as other organizations, frequently rotate in and out of these sub-systems due to U.S. and coalition military deployment cycles, which can range from six to 15 months, or civilian position transfers. Knowledge attenuation significantly affects organizational effectiveness when key individuals or leaders within the sub-system ineffectively transfer critical experience-based knowledge to follow-on members. Knowledge “vacuums” are frequent as new members acquire or create sufficient knowledge to add value to sub-system efforts and performance.

The ICAS KM model also identifies eight organizational characteristics useful in analyzing CSTC-A through a KM lens. As depicted in Figure 1, these characteristics,
which emerge from the nature of the organization, include organizational intelligence, shared purpose, selectivity, optimum complexity, permeable boundaries, knowledge centricity, flow, and multidimensionality. Overall, these characteristics describe how flexibly an organization, within its environment, applies the right knowledge at the right time to attain goals. Within the ICAS model and specific to CSTC-A, these characteristics manifest through hierarchical and sub-system interactions that facilitate vertical internal knowledge flows and external horizontal knowledge flows throughout all levels of the organization. Further, information technology tools such as e-mail, video teleconferencing, shared portals, and meetings enable these knowledge flows and communicate goals, strategic and operational direction, and priorities. Additional enablers include training, personnel skill alignment, and organizational agility critical to effectively responding to the dynamic external and internal environments. Overall, the ICAS model describes CSTC-A knowledge management through its capacity and ability to solve complex problems as well as make and implement decisions to achieve operational and strategic goals.
Socio-Cultural Implications for Knowledge Management

The “first generation” of KM, which evolved to roughly the mid-1990s, neglected much of the socio-cultural aspects of knowledge. Two studies completed in the late 1990s identified culture as one of the main barriers to KM implementation. During this first generation, KM efforts largely concentrated on information technology and “converting tacit to explicit knowledge” that was more easily shared through information systems. Consequently, despite significant codification and technology investments, ineffectiveness and failure characterized many KM endeavors. Over the past decade, however, the second-, third-, or “next-generation” of KM study and practice increasingly focus on socio-cultural aspects of KM as organizational knowledge derives from people
and is subject to group and social dynamics such as organizational culture. These dynamics significantly increase in complexity with multi-organizational networks and contextually, the introduction of Complex Adaptive Systems and Chaos theories in later generation KM models proves instrumental in understanding the role of KM in organizations. However, organizational culture remains a key determinant to KM success as it affects the spectrum of knowledge “capture and/or creation, sharing and dissemination, and acquisition and application” activities.

Organizational knowledge is primarily tacit and as such requires individual willingness to share and the ability to effectively articulate or transfer what is in individual minds. Further, tacit knowledge is more prevalent in increasingly complex environments and problems. Considering that tacit knowledge sharing is the basis for organizational knowledge creation, the social interaction that enables tacit knowledge sharing becomes critical. Organizational cultures and subcultures serve as a governing mechanisms for this interaction and are key components of “ensuring that critical knowledge and information flow within an organization.” Culture dynamically manifests in how organizations value trust, openness, internal and external knowledge, change, innovation, learning, and collaboration. Trust is fundamental to internal and external knowledge sharing and can significantly influence the extent to which individuals are willing to share knowledge. Captured knowledge, ideas, collaboration, and learning contribute to and enhance knowledge creation, sharing, acquisition and application by increasing organizational memory, absorptive and problem solving capacities, and innovation. By extension, culture is often a critical enabler to improved organizational performance in complex environments. Culture also affects the
effectiveness of multi-organizational network environments across the dimensions of relationships, accessibility, experience, language, values, and interests. Contextually, thus, organizational culture is an essential element of KM yet often presents significant barriers to effective KM implementation and use.

**Overcoming Cultural Barriers**

Although cultural barriers to KM efforts cover a broad spectrum, three primary categories emerge. The first category is barriers to knowledge sharing and includes trust, collaboration, social capital, and language. The second category is barriers to knowledge acquisition and includes learning, receptiveness, and absorptive capacity. The third category is barriers to application and includes organizational risk aversion and intolerance. Due to the nature of knowledge in organizations, these categories are not discreet and significantly influence one another. Further, all of these cultural barriers exist to lesser or more degrees within and across the U.S. DOD and interagency environment. Given that organizational culture is the “medium in which organizations reside,” changing culture is both a difficult and lengthy process. Implementing and using KM, however, invariably necessitates cultural change. Resultantly, resistance is inevitable and presents an obstacle or block to effective or successful change. Resistance occurs from both individuals and groups which makes addressing resistance challenging. If unaddressed, however, resistance can derail a change effort and may result in the unintended consequences of negative organizational turmoil, employee dissatisfaction, or the necessity to refocus a change effort toward damage control vice successfully implementing the required change. As
such, understanding and overcoming resistance must be an integral part of any KM organizational change strategy.

Overall, the cultural barriers to knowledge sharing center on knowledge creation and capture. The primary barrier to knowledge sharing is lack of trust. Trust develops and improves through social interaction, which is the basis for knowledge creation. Accordingly, organizational cultures that limit or discourage social interaction jeopardize knowledge creation and, by extension, knowledge management initiatives overall. Collaboration, or the extent to which organizations leverage combinative intellectual efforts in achieving goals, also affects knowledge sharing and includes the organizational components of epistemology and identity. Epistemology refers to the "nature" and perspective of knowledge within an organization or network—either objectivist (i.e., knowledge as an object, valuing explicit over tacit) or practice-based (i.e., knowledge as embedded in practice and socially constructed). Organizations with an objectivist perspective tend not to value the social interaction and communication critical to collaboration and knowledge sharing. Additionally, identity refers to the extent to which the organization or network share a sense of purpose or direction. Lacking a shared identity decreases the likelihood of knowledge sharing, which is essential to effective collaboration. Related to collaboration, social capital is "the stock of relationships, context, trust, and norms that enable knowledge sharing behavior." These relationships often are contingent on internal and external politics as well as perceptions of knowledge as a source of power, which can erode organizational trust and, thus, knowledge sharing. Finally, language encompasses the technologies, vocabularies, and mental models or "frames of reference" within organizations.
Differences in technologies, vocabularies, and underlying assumptions limit the effectiveness of communication and knowledge sharing; however, these differences typically exist within organizations and across multi-organizational networks.

The barriers to knowledge acquisition center on understanding, or contextualizing, knowledge relative to the knowledge needs of the organization or network. Individual and organizational learning is inherent in knowledge acquisition and is critical to expanding the capacity of organizations or networks to understand and recognize knowledge deficiencies, obsolescence, and opportunities in addressing or solving problems. Organizational cultures that inhibit learning also limit the capacity of organizations to adapt, develop, and change based on experience-derived knowledge. A second cultural barrier to knowledge acquisition is the lack receptiveness to internally and externally generated ideas, such as a “not-invented here syndrome.” Organization cultures characterized by a lack of receptiveness significantly limit how organizations contextualize new knowledge relative to their organization as well as implement change based on lessons learned and in response to environmental demands. The final cultural barrier to knowledge acquisition is low or lacking absorptive capacity within organizations. Absorptive capacity, or openness to change and innovation, relates to existing internal and external knowledge and determines how effectively organizations understand and leverage knowledge as a mechanism for successful change. Organization cultures that do not value openness, learning, or innovation lack in absorptive capacity and are ineffectual in the change required for effective KM implementation and use.
Finally, the barriers to application focus on how organizations use or apply knowledge in decision-making, problem solving, or change efforts. The first cultural barrier to knowledge application is risk aversion. Risk-averse organizations are reluctant to embrace environmental uncertainty and the innovation and creativity required to adapt in achieving desired results. Risk-averse organizational cultures are also less likely to value or apply unproven knowledge as part of decision-making or problem solving processes. Further, risk aversion determines the degree to which organizational leaders will undergo change. The more risk averse the organizational culture, the lesser the degree of change organizational leaders are willing to undergo. The final cultural barrier to knowledge application is intolerance for mistakes or a perceived need for help. Intolerant cultures are less likely to embrace collaboration, as well as apply new or unproven knowledge in decision-making or problem solving. Organizational intolerance stifles knowledge base growth and resultantly limits effective KM use as a strategic enabler.

Overcoming cultural barriers to knowledge creation, acquisition, and application requires a threefold strategic leader focus. First, leaders must provide an organizational vision that incorporates knowledge and learning. Providing a vision is the “primary task of strategic leaders” and “sets the long-term direction for an organization.” In the context of KM, related tasks are to communicate, develop, and implement the vision in a way that promotes inter- and intra-organizational interaction and relationship building. Second, leaders must develop and shape an organizational culture that values knowledge, collaboration, learning, and innovation. Organizational culture “supports and helps to communicate” the vision and is at the foundation of KM implementation.
Organizational cultures that value knowledge, collaboration, learning, and innovation create synergistic and mutually supportive environments where these characteristics thrive. In shaping organizational cultures, KM tools such as social network analysis assist strategic leaders in understanding knowledge flows within and between organizations and provide a framework for identifying where gaps or barriers exist. Once identified, leaders can focus resources and efforts in bridging knowledge gaps and overcoming identified barriers. Finally, strategic leaders must build and shape joint, interagency, and multi-national relationships that enable and encourage knowledge sharing, acquisition, and application. These relationships are critical to realizing a whole of government KM approach and leveraging the collective capabilities of the multi-organizational network in achieving SSTRO unity of action and effort.

Recommendations

The preceding analysis explores KM as a strategic SSTRO enabler within an internal multi-organizational network environment and external VCUA environment. Knowledge obtained from conducting SSTRO and through addressing the myriad of associated wicked problems is a dynamic strategic resource requiring effective internal and cross-organizational management. As such, KM provides a critical “deliberate and systemic” enabling mechanism for coordinating and leveraging the “people, processes, technology, and organizational structure” for synergistic “knowledge creation, sharing, and application” in successfully executing SSTRO. The analysis contained herein also explores cultural barriers to KM implementation and use. Previous KM initiatives largely failed due to a primary focus on technology and knowledge codification while neglecting the socio-cultural aspects of KM that are integral to KM success. In this
regard, it is critical for strategic leaders to focus on overcoming prohibitive cultural barriers as part of any KM endeavor. In the context of the overall analysis provided herein, three specific recommendations follow.

First, to meet the near-term challenges associated with SSTRO, the U.S. Department of Defense and the U.S. Department of State Office of the Coordinator for Reconstruction and Stabilization (S/CRS), under the authority granted in NSPD 44, must develop a formally recognized and KM-enabled SSTR community of practice. The reasons for this are twofold. First, communities of practice facilitate the trust-building social construct necessary for increased tacit and explicit knowledge sharing and capture, accelerated learning, improved innovation, and more efficient and effective strategy implementation. Second, communities of practice help mitigate negative knowledge attrition and enhance, through improved knowledge sharing within the network, the derived utility of other knowledge processes and KM best practices such as AARs and lessons learned. A comprehensive social network analysis (SNA) should precede establishing the community to ensure effective capture and gap analysis of knowledge flows within the network. Further, strategic leaders within responsible SSTR organizations must champion the community and drive shared vision, norms, values, language, change, and investment to achieve synergistic accomplishment of objectives, goals, and overall SSTRO strategy.

Second, given the increasingly widespread recognition of KM as a strategic enabler, the collective National Security apparatus must develop and implement a whole of government KM strategy. The January 2009 *U.S. Government Counterinsurgency Guide* clearly articulates the primary justification for a whole of
government KM strategy given “one of the most critical yet pervasive shortcomings that interagency operations face is the failure to manage and share knowledge.”\textsuperscript{110} A comprehensive strategy must encompass all facets of KM, specifically people, processes, technology, and organizational structure, and must begin with strategic leadership. As expressed by organizational management author Peter Drucker,

\begin{quote}
One does not ‘manage’ people. The task is to lead people. And the goal is to make productive the specific strengths and knowledge of each individual.\textsuperscript{111}
\end{quote}

Leadership is critical to KM strategy development and implementation as it drives the vision, cultural and structural change, process re-engineering, and technology investment essential to KM effort success.\textsuperscript{112} Also critical are people as knowledge “exists within people, part and parcel of human complexity and unpredictability.”\textsuperscript{113} A whole of government KM strategy must first focus on socio-cultural aspects of KM, with process, technology, and structural aspects changed or designed to support.\textsuperscript{114} Further, leveraging ongoing and planned KM efforts and lessons learned, including those derived from developing a SSTR community of practice, is essential to efficient and effective development of a more holistic strategy. Through holistic and effective implementation and use across and within the spectrum of U.S. agency functions, KM provides an integral and unifying tool for achieving national security objectives.

Finally, the U.S. Department of Defense, the U.S. Department of State, as well as the broader interagency must focus on becoming learning organizations. Learning organizations and “an organizational culture and structure that supports learning and the sharing and use of knowledge” are critical success factors in KM implementation and use.\textsuperscript{115} Additionally, learning organizations emphasize shared vision, systems thinking, communities of practice, a learning culture, less hierarchical or more “self-
organizing” structures, and an external environment focus. These characteristics enable what Nonaka and Takeuchi metaphorically refer to as a “hypertext” organization, or one that leverages combinative and complementary bureaucracy and task force efficiencies and effectiveness. Essentially, it is an organization with the “strategic ability to acquire, create, exploit, and accumulate new knowledge continuously and repeatedly in a cyclical process.” Thus, focusing on becoming learning organizations, in concert with KM implementation and use, will significantly improve U.S. federal agency agility, responsiveness, innovation, and decision-making in addressing and managing the myriad of challenges in today’s strategic environment.

Conclusion

The U.S. faces an increasingly complex and uncertain world typified by a host of wicked problems. The ongoing SSTRO efforts in post-conflict Iraq and Afghanistan are but one example of the challenges faced in this environment and one that clearly highlights the critical role that whole of government collaboration and knowledge sharing play in achieving strategic success. In responding to this environment, KM provides a powerful strategic enabler that facilitates improved collective agility, responsiveness, innovation, decision-making, and continuously expanding long-term problem solving capacity. Accordingly, U.S. federal agencies are increasingly focusing on KM to further develop these strategic competencies—competencies that position the U.S. to more effectively meet U.S. national security objectives. Realizing KM as a strategic enabler, however, requires overcoming prohibitive cultural barriers. Foremost, this necessitates strategic leader focus as leadership drives the vision, culture, and relationships required for continuously improved knowledge sharing, acquisition, and application. Including
and beyond SSTRO, overcoming barriers transcends organizational boundaries as responsibility for achieving unity of effort and overall strategic success falls on networks of knowledge and capabilities. As such, it is imperative that strategic leaders collectively pursue a whole of government KM strategy in concert with developing learning organizations. In today’s environment, knowledge and continuous learning are vital strategic resources we can no longer afford to lose.

Endnotes


3 For the purposes of this paper, SSTR encompasses those activities, missions, and efforts as outlined or defined in the following sources and references embedded in these sources:


7 Ibid., 334-339.


13 Aggestam, “Learning Organization or Knowledge Management – Which Came First, The Chicken or the Egg?,” 298-300.


15 Ibid., 69.


18 Ibid., 2.

19 Ibid., 4.


22 Ibid., 12.


26 American Productivity & Quality Center (APQC), *Retaining Valuable Knowledge: Proactive Strategies to Deal with a Shifting Work Force* (Texas: American Productivity & Quality Center, 2002), 7. A functional definition of Knowledge Management is “a systematic process of connecting people to people and people to the knowledge and information they need to effectively perform and create new knowledge. The goal of a knowledge management initiative is to enhance the performance of the organization and the people in it, through the identification, capture, validation, and transfer of knowledge.”

27 Dalkir, *Knowledge Management in Theory and Practice*, 43.


35 U.S. Army Chief of Staff GEN George W. Casey, Jr. and U.S. Secretary of the Army Pete Geren, “Army Knowledge Management Principles,” memorandum for distribution to U.S. Department of the Army commands, July 23, 2008. See also: U.S. Department of the Army, *Operations*, Field Manual 3-0 (Washington, D.C.: U.S. Department of the Army, February 27, 2008), 7-10. The U.S. Army is incorporating KM into capstone Field Manuals. As an example, FM 3-0, *Operations*, specifically identifies KM as “the art of creating, organizing, applying, and transferring knowledge to facilitate situational understanding and decisionmaking. Knowledge management supports improving organizational learning, innovation, and performance. Knowledge management processes ensure that knowledge products and services are relevant, accurate, timely, and usable to commanders and decisionmakers.” The “Knowledge and
“Information Management” section also identifies the KM components of people, processes, and technology.


37 Ibid., 628. See also: Farida Hasanali et al., Communities of Practice: A Guide for Your Journey to Knowledge Management Best Practices (Houston, TX: American Productivity & Quality Center, 2002), 1-7. APQC defines communities as: “Networks of people—small and large—who come together to share ideas with and learn from one another in physical and virtual space. These communities of practice, of interest, and of learning are held together by a common purpose or mission. They are sustained by a desire to share experiences, insights, and best practices.”


41 Ibid.

42 Terrence K. Kelly and Thomas S. Szayhna, Stabilization and Reconstruction Staffing: Developing U.S. Civilian Personnel Capabilities (Santa Monica, CA: RAND Corporation, 2008), 68.

43 Project on National Security Reform, Forging a New Shield (Washington, DC: Project on National Security Reform, November 2008), A8-697.


Dalkir, Knowledge Management in Theory and Practice, 69. The definition of complex adaptive systems is “organizations that are composed of a large number of self-organizing components, each of which seeks to maximize its own specific goals but which also operates according to the rules and context of relationships with the other components and the external world.” Component members of the CSTC-A staff are empowered to self-organize but are hierarchically part of the CSTC-A organization. As such the complex adaptive system represented by CSTC-A is considered intelligent.

Hislop, Knowledge Management in Organizations: A Critical Introduction, 44.

Gillian Wright and Andrew Taylor, “Strategic Knowledge Sharing for Improved Public Service Delivery: Managing an Innovative Culture for Effective Partnerships,” in Knowledge


65 Ibid., 580-587.


67 Dalkir, Knowledge Management in Theory and Practice, 179. Dalkir as well as Nonaka and Takeuchi use E. Schein’s (1985 and 1999) definition of organizational culture as “a pattern of basic assumptions—invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration—that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems.”

68 Hislop, Knowledge Management in Organizations: A Critical Introduction, 46.

69 Yang and Yen, “A Viable Systems Perspective to Knowledge Management,” 647.


71 Dalkir, Knowledge Management in Theory and Practice, 185.

72 Hislop, Knowledge Management in Organizations: A Critical Introduction, 51.

73 Jennifer Lewis Priestley and Subhashish Samaddar, “Multi-Organizational Networks: Three Antecedents of Knowledge Transfer,” International Journal of Knowledge Management 3, no. 1 (January-March 2007): 87. Absorptive capacity is defined as “an organization’s ability to recognize the value of external information, assimilate it and apply it to generate economic rents” and “is critical to its innovative capabilities.”


75 Dalkir, Knowledge Management in Theory and Practice, 190.


78 Hislop, Knowledge Management in Organizations: A Critical Introduction, 52.

79 Ibid.


Ibid., 39.

Priestley and Samaddar, “Multi-Organizational Networks: Three Antecedents of Knowledge Transfer,” 88. Shared identity or purpose facilitates both intra- and inter-organizational knowledge sharing.

Ibid.


Davenport and Prusak, *Working Knowledge*, 97. See also: Dalkir, *Knowledge Management in Theory and Practice*, 189. Dalkir makes reference to the fact that mental models are also called basic underlying assumptions and represent possibilities—managers use mental models to “diagnose problems and make decisions.”

Dalkir, *Knowledge Management in Theory and Practice*, 43.


Dalkir, *Knowledge Management in Theory and Practice*, 212.


Ibid.

Ibid.


Ibid., 45. See also: Dalkir, *Knowledge Management in Theory and Practice*, 185.

Yeo, “Building Knowledge Through Action Systems, Process Leadership and Organizational Learning,” 38. Collaborative cultures with open trans-boundary communication and dialogue foster knowledge sharing based on social construct that leads to systems thinking and shared vision necessary for organizational learning. Wright and Taylor, “Strategic Knowledge Sharing for Improved Public Service Delivery: Managing an Innovative Culture for Effective Partnerships,” 203. Innovative cultures encourage knowledge sharing, acquisition, and application that further supports collaboration and learning.


Steven Cavaleri and Sharon Seivert, *Knowledge Leadership: The Art and Science of the Knowledge-Based Organization* (Burlington, MA: Elsevier, Inc., 2005), 269-274. See also:
Dr. Kristen Bell DeTienne et al., “Toward a Model of Effective Knowledge Management and Directions for Future Research: Culture, Leadership, and CKOs,” 34.

113 Davenport and Prusak, Working Knowledge, 5.

114 American Productivity & Quality Center (APQC), Retaining Valuable Knowledge: Proactive Strategies to Deal With a Shifting Work Force, 7.


116 Davenport and Prusak, Working Knowledge, 169. See also: Aggestam, “Learning Organization or Knowledge Management – Which Came First, The Chicken or the Egg?,” 298.


118 Ibid., 166.