Knowledge Management and the Role of the CKO

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(The following appears as a chapter in <u>Knowledge Management: A Catalyst for Electronic Government</u>)

Much of the discussion surrounding the emerging field of knowledge management (KM) is like stirring a vat of "jello with a slinky", little firms up. KM concepts seem to float in a jello-like environment without form, density, or direction making it difficult for practitioners to grasp key KM concepts. A common refrain in corporate boardrooms and executive offices in federal agencies is that "I'd be happy to embrace KM if I only knew what it is and how it will help us meet enterprise objectives".

This refrain is understandable since the theoretical bases underlying knowledge management is unclear and is still emerging[2]. Additionally, there is little consensus regarding the competencies needed by those individuals charged with leading knowledge management initiatives. An alphabet soup of acronyms have sprung to life, giving organizational legitimacy to individuals who are charged with the task of valuing, leveraging or re-using tacit and explicit knowledge. CKO, CTO, CLO, KA, KM, and KE represent a sampling of the acronyms associated with the field of KM[3]. But, what do these people do? Are these people competent to execute tasks to drive business results? How would you recognize a "third degree black belt" CKO if you bumped into one in the hallway? The overall purpose of this chapter is to throw some "conceptual cement" into the "KM vat of jello" to firm up some KM concepts and contribute some thoughts and ideas regarding what competencies and skills CKOs need to survive and flourish.

More specifically, the purpose of this chapter is threefold: (1) establish a rationale justifing why managing knowledge is a significant factor of production in knowledge-based

organizations, (2) review selected studies that identify the competencies, skills, and behaviors of those individuals charged with task of implementing a KM vision, and, (3) present the results of brainstorming sessions involving public and private sector CKOs or equivalents who responded to four key questions associated with knowledge management.

Why managing knowledge is a significant factor of production in knowledge-based organizations?
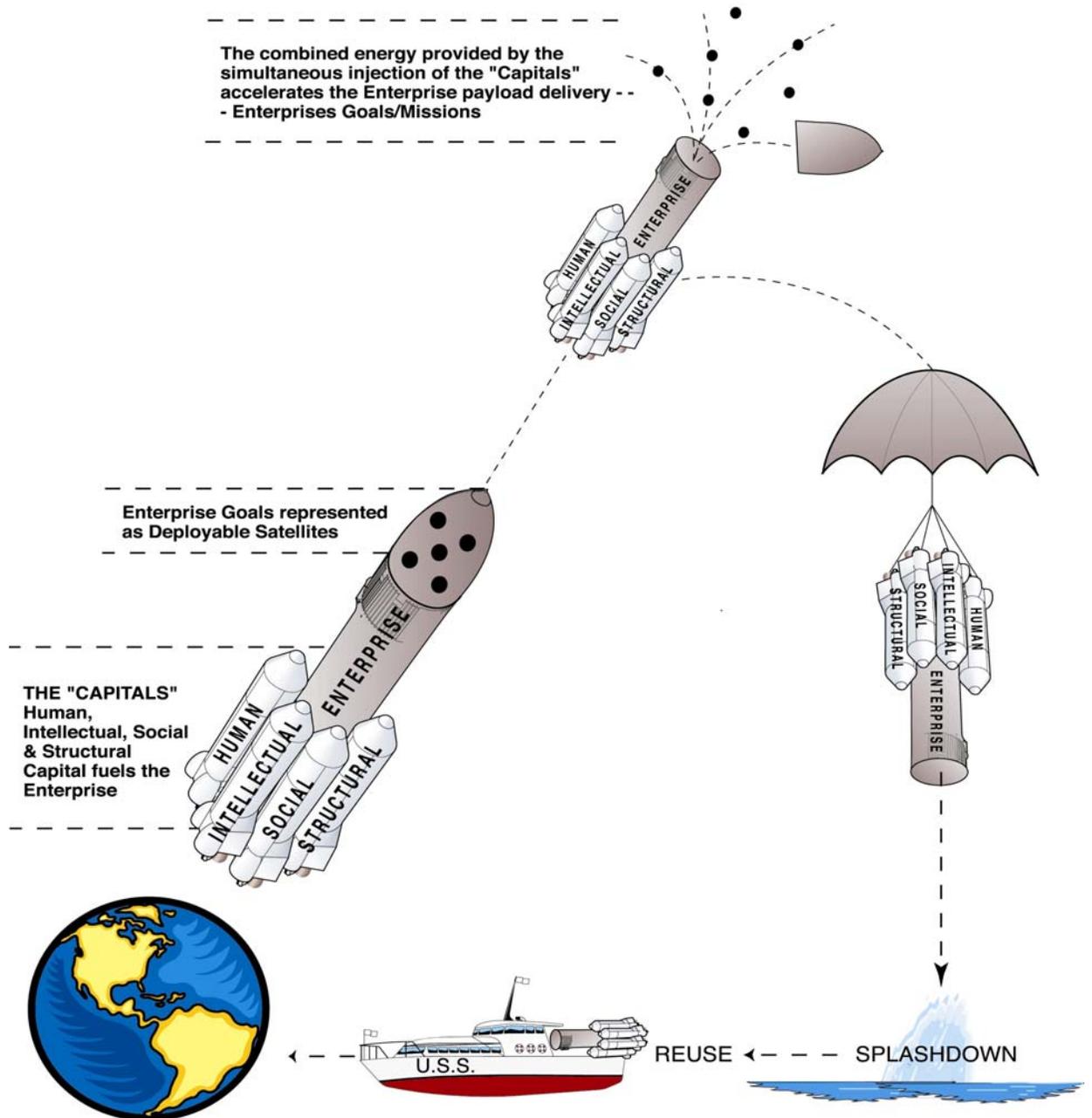
First, from an economic standpoint, traditional factors of production -- land, labor, and capital-- no longer occupy center stage as a means to leap forward. To paraphrase Drucker and Thurow, knowledge has become the key economic resource….with everything else dropping out of the equation, knowledge has become the primary source of competitive advantage. Competitive advantage depends on the smartness with which knowledge is used throughout the enterprise. Second, with the growth in the number of people using the internet coupled with the rapid expansion of the wired and wireless global information infrastructure, avenues to link people and ideas to produce new products and services grow exponentially. Third, the characteristics of digital media are inherently different than that of physical or tangible products. The ease in which media in digital form can be replicated, transmitted, modified, and manipulated is inherently different that physical works (books, journals,…) that rely on traditional means of production (printing) and distribution (physical delivery). Explicit and tacit knowledge about a product or service are as important as the product of service itself because it serves as a basis to improve or develop new products or services. Hence, knowledge has emerged as a formidable factor of production -- a "capital".

Figure 1, Knowledge Management: Accelerating the "Capitals" to Propel the Enterprise graphically illustrates how the combination of human, intellectual, social and structural capital is the fuel that propels knowledge-based enterprises to meet enterprise goals or missions[4].

Figure 1

KNOWLEDGE MANAGEMENT:
Accelerating the "Capitals" to Propel the Enterprise

The combined energy provided by the simultaneous injection of the "Capitals" accelerates the Enterprise payload delivery - - - Enterprises Goals/Missions

Enterprise Goals represented as Deployable Satellites

THE "CAPITALS"
Human, Intellectual, Social & Structural Capital fuels the Enterprise

REUSE ← − − − SPLASHDOWN

U.S.S.

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It takes the injection of highly volatile liquid nitrogen to propel a rocket into space to deliver payloads. Similarly, it takes the simultaneous injection of human, intellectual, social and structural capital to propel an enterprise forward at ever increasing speeds to meet global enterprise goals or missions. Those enterprises that can create and apply knowledge faster than its competitors or adversaries have a distinct advantage. The dynamic mixing of human, intellectual, social, and structural capital provides the fuel for creating and using knowledge.

A key factor in rocketry and knowledge-based organizations is to re-use components and learn from each mission. It makes no sense to discard fuel tank stages of rockets when they can be re-used. It also makes no sense to discard the human, intellectual, social and structural capital in organizations when each factor of production may be in short supply. The object is to learn, re-use where applicable, and innovate ways to deliver "payloads".

It is interesting to note that there may be alternate ways to deliver payloads into space other than using rockets. Likewise, enterprises need to be cognizant that "hitching" your "capitals" to single rocket design may spell disaster for the enterprise if the organization fails to experiment with new modes of propelling payloads that may supercede rocketry. Hence, continuous innovation should continue unabated.

What competencies, skills, and behaviors are needed by those charged with implementing a KM vision?

Earl and Scott (1999), Bonner (2000), and Abell and Oxbrow (1999) attempt to identify competencies and skills that CKOs or those charged with implementing a KM vision need. Earl and Scott's (1999) seminal work "What is a Chief Knowledge Officer" found that

there is little or no job specification for CKOs but their organizational goals were fairly clear. A

CKO's task is to correct one or more of the following perceived deficiencies:

- Inattention to the explicit or formal management of knowledge in ongoing operations.
- Failure to leverage the hidden value of corporate knowledge in business development.
- Inability to learn from past failures and successes in strategic decision-making.
- Not creating value or "making money" from knowledge embedded on products or held by employees [5].

These deficiencies suggest that organizations are doing an inadequate job of managing or

leveraging their intellectual assets. CIOs seem to focus their energies and activities on managing

physical assets versus intellectual assets. CIOs are rarely fired if they can: (1) keep networks

running without disruption, (2) furnish near state-of-the-art computer equipment and applications

on a reasonable lifecycle to ensure that the information technology provides a means to meet

business objectives, and (3) provide robust security to protect networks from physical destruction

and a myriad of cyber-threats delivered via cyberspace. Note that primary activities listed above

deal with physical assets, something you can touch and feel. Leveraging intellectual assets,

intangible assets in the form of data, information, tacit and explicit knowledge, reside somewhere

"down the food chain" of critical activities for CIOs. To summarize Earl and Scott (1999), "most

CIOs have demanding enough agendas without adding the ambiguities of the CKO role.

Dede Bonner in an article appearing in the February 2000 issue of Training &

Development entitled "Enter the Chief Knowledge Officer" surveyed eighteen large public and

private sector organizations to ascertain roles, responsibilities, and activities of chief learning

officers (CLOs) and CKOs. Bonner found that CKO and CLO roles are strikingly similar. The

following activities were most often universally by cited both groups:

- Align and integrate diverse functions or groups.
- Use previous best practices or design benchmarking studies.

- Develop a culture of acceptance of organizational learning, continuous learning, and knowledge management.
- Have a customer orientation.
- Create knowledge-content activities to enterprise objectives.
- Leverage corporate-wide learning.
- Establish partnerships with senior managers.
- Conduct strategic planning and implementation.
- Be a visionary and champion for organizational learning and knowledge management.

More importantly, CKOs engage in activities associated with a series of power verbs including: align, benchmark, design, develop, identify, implement, integrate, leverage, partner, and plan. These verbs indicate that CKOs and CLO's may need to possess a diverse mix of skills and behaviors that rely more on personal influence, persuasion, interpersonal skills, and flexibility versus a more directive mix of skills associated CEO and COO traditional roles and responsibilities.

Based on a review of seven case studies, Abell and Oxbrow (1999) maintain that providing a new role, with a new title, as a mechanism for emphasizing KM as a new corporate approach rather than as initiative is gaining ground. A host of roles and titles is emerging. Additionally, a KPMG study indicated that in 100 leading companies almost all thought KM was "here to stay" and many were taking steps to implement KM concepts.

What background and skills are necessary for those charged with implementing a KM vision? Abell and Oxbrow (1999) report that CKOs need to view organizations holistically and possess a mix of hard and soft skills characteristic of a leader of a strategic change management program. They divide their skills into two major categories: (1) skills to develop the vision, and, (2) skills to plan the program. Following is a listing of recommended CKO skills.

Skills to Develop the Vision	Skills to Plan the Program
• Business knowledge • Political understanding • Risk analysis • Influencing skills • Leadership • Creativity • Presentation skills	• Organizational development • Information and IT strategy • Financial planning • Communication • Innovation • Risk management • Flexibility and openness to all issues • Managing across boundaries • Helping individuals to self-manage • Ability to release the full potential of people

What these three selected studies indicate is that managing knowledge is increasingly a factor of production, individuals charged with the task of implementing a KM vision need a mix of hard and soft skills but must link their efforts to a business value proposition, and lastly, there is still a perceived deficiency in leveraging the hidden value of corporate knowledge in business development or on-going operations. Most of these studies focus on private industry. Are the results of these studies applicable to the public sector? Is there a difference in the roles and responsibilities for CKOs in the private sector versus the public sector?

Results of brainstorming sessions involving public and private sector CKOs

To ascertain if differences exist in roles and responsibilities between public and private sector CKOs, two separate automated brainstorming sessions were conducted in May and June 2000 at the Information Resources Management College of the National Defense University[6]. The first group included CKOs or equivalents from the federal government. The second group included CKOs or equivalents from the private sector primarily from information technology and consulting businesses. Each group were asked to brainstorm ideas responding to four questions:

1. Why is KM important to your organization?

2. What is the role of a CKO in a public sector organization?

3. What competencies make a CKO successful?

4. What are the most important personal attributes CKOs must bring to the job?

The framing of the first question "why is KM important to your organization" was intended to elicit higher order responses asking for a rationale justifying KM investments. With continuing controversy surrounding the role of a CIO in federal agencies, introducing CKOs in public organizations may muddy the waters regarding their contribution to mission objectives. Hence, question #2 focused on the role of a CKO in a public organization. Question #3 attempts to probe beyond some of the existing literature that reports on "what CKOs do". The attempt here is to determine which competencies help make CKOs successful. Lastly, recent research shows that CKOs come to the position from diverse academic backgrounds and from those who have cross-functional experience in enterprises. It seems the more diverse the better. Consequently, question #4 was included to determine the most important personal attributes that CKOs must bring to the job as a result of varied academic backgrounds and experiences.

Figure 2 - Importance of KM to Your Organization graphically displays the combined findings of both brainstorming sessions in a hub and spoke diagram[7]. The central question is located in the center of the diagram with enabling verbs located in oval shapes located on the spokes. The main idea or activities are located in rectangular boxes at the end of the spokes. Detailed information for each main idea or activity is located at the periphery of the diagram.

Figure 2

IMPORTANCE OF KM TO YOUR ORGANIZATION

1. Provide an IT-enabled information base to enable citizens and customers to access information and services they need.
2. Establish a network of knowledgeable government employees who can add value to citizens or customers requests.

1. Convert intellectual capital to structural capital.
2. Focus strategic thinking on capitalizing on knowledge vs. focusing on the budget.

1. Reduce costs, risks, learning curves & start-up time.
2. Contribute to bottom line/mission goals.

1. Share best-known practices across the enterprise.
2. Learn from failed efforts.
3. Provide platform for knowledge re-use & innovation.
4. Establish benchmark for internal & external performance - individuals and teams.
5. Acclimate new employees to "the way we do things around here".

1. People are our primary asset & are crucial to maintaining organizational expertise.
2. Capture and leverage what people know -- know-how & know what.
3. Promote career growth.

1. Increase the transfer of individual knowledge to the organization.
2. Foster across organizational boundaries, time & space.
3. Link people who have the requisite tacit and explicit knowledge with those who need it to do their jobs.

1. Provide the right information in a context that aids decision-making.
2. Integrate new knowledge into decision processes by sharing and collaborating with players and stakeholders in decision processes.
3. Use information and knowledge to align organizational actions with missions and visions.

1. Facilitate and accelerate learning - create opportunities for individuals and groups to put new knowledge to use.
2. Leverage organizational knowledge - bring the right information to the right people in an understandable context that addresses new challenges.
3. Value individual learning by rewarding it and leveraging it to the enterprise level.

Increase collaboration opportunities - enrich the exchange of tacit and explicit knowledge between people.

1. Provide an infrastructure for electronic and social networking to develop new products or services.
2. Foster and provide access to rich pools of ideas so others can capitalize on them.

1. To achieve knowledge superiority over adversaries or competitors.
2. As a business proposition, product or service.
3. Change the value proposition from delivering goods and services to delivering knowledge and expertise about those goods and services.
4. Focuses collective organizational intellect on customer needs.
5. To meet business/mission goals.

1. Focus on knowledge of customer needs to drive the organizations efforts.
2. Improve customer outcomes and experiences with services rendered.

Central bubble: Why is KM Important to your Organization?

Nodes: E-gov, Structural Capital, Human Capital, Social Capital, Learning, Collaboration, Innovation, Productivity, "Best" Practices/Processes, Leadership and Decision Making, Customer Satisfaction, Competitive Advantage/ Market Differentiation

Connector labels: Create & Use, Enable, Increase, Share, Attract & Retain, Foster, Provide, Encourage & Use, Foster, Foster, Create, Increase

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The findings indicate a particular emphasis on the "capitals". Attracting and retaining human capital, fostering social capital, and creating and using structural capital was heavily emphasized by both groups with the private sector CKOs most heavily emphasizing the need to attract and retain human capital to ensure that they remain competitive. Both groups stressed the need to share best practices/processes but tempered that notion with the idea that innovation, collaboration, and learning are the activities that will propel the organization forward. Simply relying on sharing best practices will yield short-term results. All participants agreed that KM efforts need to be linked to business goals or mission objectives. The public sector CKOs look to KM initiatives to provide a foundation for electronic government while the private sector CKOs

made little mention of using KM as a basis for electronic business. Lastly, both groups

recognized the ultimate result of any KM efforts is to satisfy customers by providing the

leadership with the right information at the right time to make critical business decisions.

Examining the content shown in Figure 3 Role of the CKO indicates that CKOs in public

sector play a markedly different role than that of a CIO. While CIOs focus much of their activity

on physical computer and network assets, CKOs focus their efforts on an integrated set of

activities that address organizational behaviors, processes, and technologies.
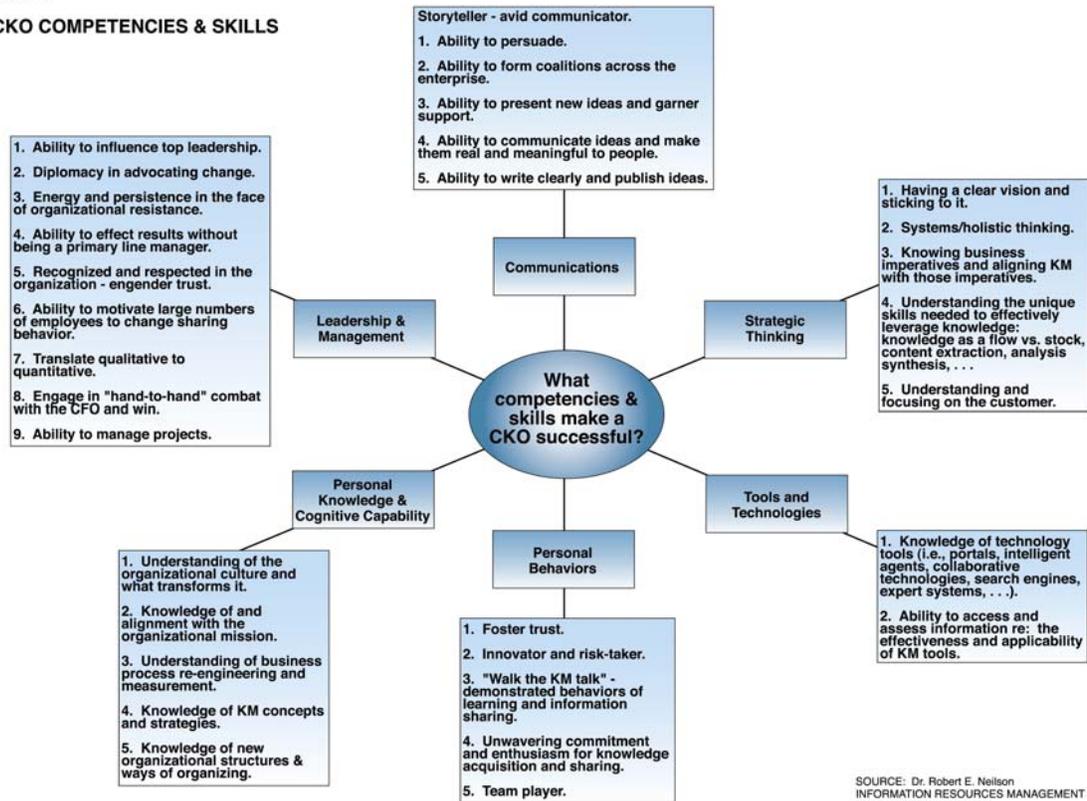

Figure 3
ROLE OF THE CKO
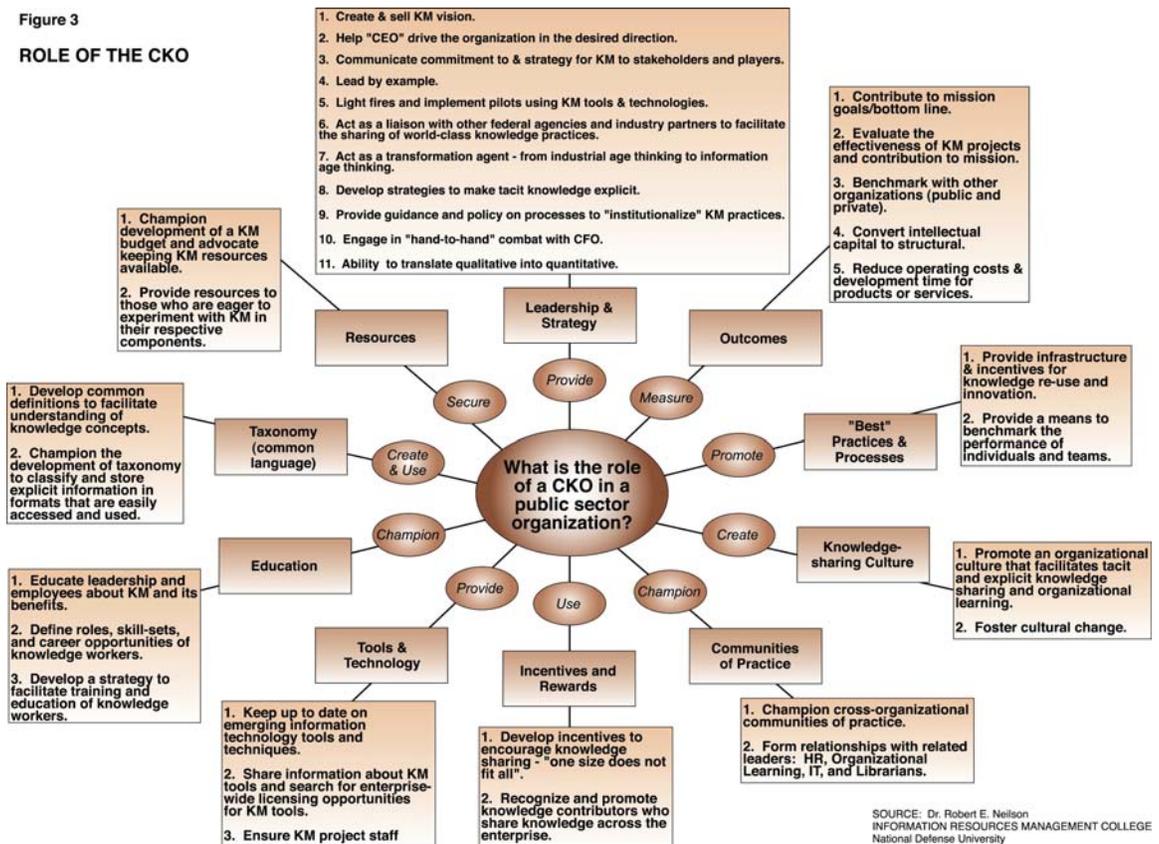
Critically analyzing the content for each activity indicates that a CKO's role involves

leveraging the "soft stuff" in organizations. Creating a knowledge-sharing culture, championing

communities of practice, providing leadership and strategy, and using incentives and rewards are

activities that are the province of the CKO but are tough to measure using traditional and generally accepted business metrics. These activities mirror the activities of the successful CEOs. Some pundits remark that CKOs are CEOs in-waiting. CKOs must also possess a working knowledge of the tools and technologies to leverage the extant intellectual base in organizations but they are not necessarily technologists by training. In sum, their role is to coax, cajole, and provide incentives to deliver value to the organization using existing and unexploited explicit and tacit knowledge sources. Frequently, CKOs fulfill their role by experimenting and partnering with business units. Additionally, they are charged with the task of charting clear processes, classification schemes, and tools to access and use existing data, information, and explicit and tacit knowledge in a manner that promotes sharing across time, space, and boundaries.

In the beginning of this chapter, a key question was posed: "How would you recognize a third degree black belt CKO if you bumped into one in the hallway?" Figure 4 CKO Competencies and Skills illustrates six major competency areas that CKOs or aspiring CKOs should possess.

Figure 4

CKO COMPETENCIES & SKILLS

Storyteller - avid communicator.
1. Ability to persuade.
2. Ability to form coalitions across the enterprise.
3. Ability to present new ideas and garner support.
4. Ability to communicate ideas and make them real and meaningful to people.
5. Ability to write clearly and publish ideas.

1. Ability to influence top leadership.
2. Diplomacy in advocating change.
3. Energy and persistence in the face of organizational resistance.
4. Ability to effect results without being a primary line manager.
5. Recognized and respected in the organization - engender trust.
6. Ability to motivate large numbers of employees to change sharing behavior.
7. Translate qualitative to quantitative.
8. Engage in "hand-to-hand" combat with the CFO and win.
9. Ability to manage projects.

1. Having a clear vision and sticking to it.
2. Systems/holistic thinking.
3. Knowing business imperatives and aligning KM with those imperatives.
4. Understanding the unique skills needed to effectively leverage knowledge: knowledge as a flow vs. stock, content extraction, analysis synthesis, . . .
5. Understanding and focusing on the customer.

Communications

Leadership & Management

Strategic Thinking

What competencies & skills make a CKO successful?

Personal Knowledge & Cognitive Capability

Tools and Technologies

Personal Behaviors

1. Understanding of the organizational culture and what transforms it.
2. Knowledge of and alignment with the organizational mission.
3. Understanding of business process re-engineering and measurement.
4. Knowledge of KM concepts and strategies.
5. Knowledge of new organizational structures & ways of organizing.

1. Foster trust.
2. Innovator and risk-taker.
3. "Walk the KM talk" - demonstrated behaviors of learning and information sharing.
4. Unwavering commitment and enthusiasm for knowledge acquisition and sharing.
5. Team player.

1. Knowledge of technology tools (i.e., portals, intelligent agents, collaborative technologies, search engines, expert systems, . . .).
2. Ability to access and assess information re: the effectiveness and applicability of KM tools.

SOURCE: Dr. Robert E. Neilson
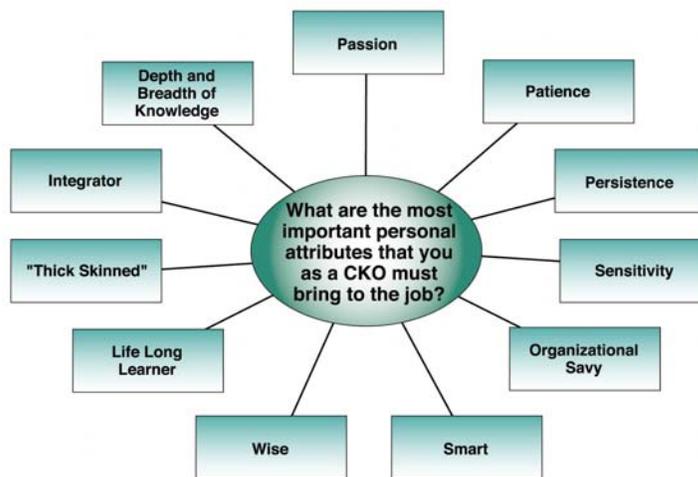INFORMATION RESOURCES MANAGEMENT COLLEGE
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Of all the competency areas, both public and private sector CKOs felt that successful CKOs must think holistically and strategically and must be able to convincingly communicate the value of KM to skeptical audiences. CKOs need to move beyond what Tom Davenport calls "serious anecdote management" and translate qualitative benefits of KM projects into quantitative benefits to win the hearts and minds of chief financial officers (CFO). Otherwise, many KM projects will fall into the management fad *de jour* category much like total quality management (TQM) and business process re-engineering. In addition to the requisite leadership and management capabilities and a working knowledge of tools and technologies, existing and aspiring CKO need to possess an *a priori* personal knowledge base and cognitive capabilities as specified in Figure 4. Without a personal knowledge base and demonstrated personal behaviors,

newly appointed CKOs will have difficulty "selling" KM concepts to senior management. They will lack credibility.

Lastly, participants in the brainstorming sessions were asked: "What are the most important personal attributes CKOs must bring to the job?". Figure 5 illustrates the results.

Figure 5

CKO PERSONAL ATTRIBUTES

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With the exception of "life long learner", most of the remaining personal attributes do not definitely discriminate between CKOs and other senior executive positions. Perhaps in future research, CKOs should address a more precise question that asks CKOs to identify those unique personal attributes they should possess that are in addition to personal attributes typically associated with senior leadership positions.

Potential Use of Findings from Brainstorming Sessions

Looking to the future, there are several potential uses for the results of the

brainstorming sessions. First, in the absence of more definitive research, the results could

be used as a basis for developing a federal CKO competency model. The CKO

competencies and skills shown in Figure 4 are a first step in answering the question posed

earlier "How would you recognized a CKO if you bumped into one in the hallway?"

Second, developing the next generation of human capital who will lead KM efforts in the

federal sector content is an important task. The results of the brainstorming sessions

coupled with complementary studies may help form the basis for KM curriculum

development, and possibly CKO certificate or certification programs. In addition, the

results could help human resources personnel working with senior executives craft better

job descriptions for CKOs. Lastly, the result could aid in developing assessment

instruments to determine if organizations are ready to embark on KM initiatives.

Summary

The results of the brainstorming sessions seem to confirm many of the findings of

previous studies and surveys. CKOs are springing to life in public and private sector

organizations addressing a perceived unmet need to capitalize on knowledge-based assets. They

possess a different mix of hard and soft skills than that of CIOs. Many of the reasons for

embarking on KM initiatives are the same in public and private sector organizations. Problems

endemic in large knowledge-based organizations are problems endemic of in large organizations

whether public or private. One key difference arose between public and private sector CKOs.

Public sector CKOs look to KM as a basis for electronic government. Many of the functions of

government are associated with collecting, analyzing, or disseminating data and information. In a logical extension of these functions, perhaps collecting, analyzing, and disseminating explicit and tacit knowledge should be added to the list.

In 1787, James Madison writing in the Federal Papers said " To give information to people is the most certain and legitimate engine of government". Extending Madison's notion, the time may have arrived where providing access to information <u>and</u> knowledge may be the most certain and legitimate functions of government.

[2] In order to move the field of knowledge management from the fad stage to a discipline with more substance, Robert de Hoog, et. al. propose a theoretical framework for KM using simulation gaming anchored in a specific process model. See: Robert de Hoog, et. al. "Investigating a Theoretical Framework for Knowledge Management: A Gaming Approach" in Knowledge Management Handbook. (1999) Jay Liebowitz, editor. CRS Press.

[3] CKO - chief knowledge officer; CTO - chief technology officer; CLO - chief learning officer; KA - knowledge architect; KM - knowledge manager; and KE - knowledge engineer.

[4] <u>Human capital</u> is all individual capabilities, the knowledge, skill, and experience of the organization's employees and managers. <u>Intellectual capital</u> includes the intangibles such as information, knowledge, and skills that can be leveraged by an organization to produce an asset of equal or greater importance than land, labor and capital. <u>Structural capital</u> is the processes, structures, and systems that a firm owns less its people. <u>Social capital</u> is the goodwill resulting from physical and virtual interchanges between people with like interests and who are willing to share ideas within groups who share their interests.

[5] Earl, Michael J. and Ian Scott. (1999). "What is a Chief Knowledge Officer?". Sloan Management Review (Winter 99, Vol.40, Number 2).

[6] The results brainstorming sessions represent the views of participants. Although the results of the sessions seem to confirm the results of similar studies, more rigorous research should be conducted to see if the findings contained in this study are generalizable to a larger universe.

[7] The results of the brainstorming sessions are also located at: http://www.ndu.edu/ndu/irmc/km-cio_role/km-cio-role.htm. The four key questions are hotlinked to graphic illustrations created in Shockware. Roll your cursor over the boxes at the end of the spokes and the detailed content will appear.