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# Knowledge Management Best Practices

CAPSTONE REPORT

**Captain Joshua Croteau**  
**Company Commander**  
**United States Army**

University of Oregon  
Applied Information  
Management  
Program

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Academic Extension  
1277 University of Oregon  
Eugene, OR 97403-1277  
(800) 824-2714



Approved by

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Dr. Kara McFall  
Lecturer, AIM Program



Knowledge Management Best Practices

Joshua Croteau

United States Army



**Abstract**

This paper explores best practices in knowledge management for soldiers, organizational leaders and human resources professionals. Literature published after 2000 is reviewed for knowledge management best practices, tools and governance. Conclusions are presented to guide decision-making regarding knowledge management program implementation, development and maintenance.



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## **Introduction to the Annotated Bibliography**

### **Statement of the Problem**

Knowledge management is defined as the process of acquiring, processing, codifying, storing, distributing and applying knowledge (Zhang, Wang, Cao, Wang, & Zhao, 2012). Practical applications of knowledge management include processes for data management, strategically leveraging instructional and information technologies and tools, and governance structures (Ardichvili & Yoon, 2009). Knowledge management first emerged as a recognized process in the 1980s, as the term began to appear in business journals and books. The concept gained momentum as the Knowledge Age boomed with the invention of the World Wide Web. Just fifty years ago, workers in industrialized countries were making tangible products. Fast forward to the current times where only 20 percent of the workforce is dedicated to industrial work, while the rest are dedicated to knowledge work. The ability to create and diffuse knowledge has become increasingly important in respect to competitive differences between organizations. Executives and senior leaders agree that the knowledge their employees hold is the most valuable asset to an organization; therefore it is essential to identify knowledge that is valuable and at risk of being lost to the organization through retirement, turnover and competition (Dalkir, 2011).

The standardization of knowledge management is defined by the U.S. Army as a discipline that promotes an integrated approach to identifying, retrieving, evaluating, and sharing an enterprise's tacit and explicit knowledge assets to meet mission objectives (United States Combined Arms Center, 2015). Standard knowledge management processes, tools, and governance structures are currently lacking at Fort Irwin, California. Located in the Mojave Desert, Fort Irwin hosts the National Training Center (NTC), a training ground comprised of

over 1,000 square miles where Army Brigade Combat Teams come to train for worldwide operations. According to the NTC website ([www.irwin.army.mil](http://www.irwin.army.mil)), the base hosts over 4,000 soldiers each month as they hone their skills in preparation for deployment. Permanent station soldiers transition every two or three years to another duty station or into civilian life (Ward, 2013). Constant turnover in personnel and large numbers of monthly visitors creates a drastic need for standardized practices of knowledge management in human resources. Units operate on Army regulations and doctrine, yet continuity in human resources is extremely hard to achieve with high personnel turnover and thousands of new trainees at NTC each month (Evansbrown, 2015). A single, reliable source for knowledge management and related best practices and standard operating procedures is missing, which causes units to recreate systems, documents and methods.

Due to the lack of standard knowledge management practices, tools, and governance structures at the National Training Center, permanent station and visiting units lack continuity in all phases of operations from planning to execution of missions, due to causes such as personnel turnover and retirement. Thousands of soldiers transition into and out of Fort Irwin without an established knowledge management procedure, lowering productivity as soldiers must repeatedly search for forms, manuals, and important documents, delaying planning, operations or paperwork due to a lack of common processing systems. Since there is not a centralized knowledge management database or process, units recreate standard operating procedures, tactics, techniques and procedures and typically go through a steep learning curve when a member of the team retires or leaves the unit (Evansbrown, 2015). Valuable knowledge is not always captured and once lost, it must be recreated.

## **Purpose Statement**

The purpose of this annotated bibliography is to present literature that addresses the best practices of knowledge management methods and tools. For the purposes of this study, two definitions of knowledge management are referenced: (a) knowledge management as a discipline that promotes an integrated approach to identifying, retrieving, evaluating, and sharing an enterprise's tacit and explicit knowledge assets to meet mission objectives (United States Combined Arms Center, 2015); and (b) as the process of acquiring, processing, codifying, storing, distributing and applying knowledge (Zhang, et al, 2012). Research is provided that addresses best practices in knowledge management processes; sources are also provided that address the use of knowledge management tools, including recommendations on effective and ineffective knowledge management tools. Finally, literature is presented that informs knowledge management governance best practices. Whenever possible, case studies are referenced to provide empirical data to inform the findings.

## **Research Question**

**Main question.** This study addresses the following research question. What are the best practices in knowledge management methods and tools?

**Sub-questions.** How is standardized knowledge management defined? How do large organizations utilize knowledge management and how effective are these organizations at KM?

## **Audience Description**

This study is specifically targeted to three primary audiences. First, the research is significant for soldiers who work or train at Army Training Centers who will benefit from improvements to the knowledge management processes and tools. Second, this annotated

bibliography provides useful information for senior leaders who have an interest in improved efficiency and effectiveness in training and knowledge transfer. Finally, this study is significant for the Army Human Resource Command (HRC), as all training and knowledge management related to human resources are ultimately controlled by this organization.

More generally, this study is useful for human resource professionals who are charged with implementing and maintaining knowledge management processes, tools, and governance structures. Other audiences who will benefit from this research include managers in large organizations that see frequent changes in personnel through new hiring or attrition, as successful knowledge management systems and practices can help to mitigate the issues caused by these personnel changes (Dalkir, 2011). Finally, employees in these organizations who contribute to or benefit from successful knowledge management systems and processes will gain useful knowledge from the references in the annotated bibliography.

The intent of this study is to show senior leadership at Army Training Centers and visiting units the benefits of knowledge management in human resources. The goal of these findings is to establish an improved set of procedures and tools for knowledge management at the NTC and other training centers. Approval for standardization of knowledge management at NTC lies with the 916th Support Brigade Commander, Colonel Matthew Ruedi and the Fort Irwin Commander, General Joseph Martin.

### **Exploratory Search Report**

**Search strategy.** Five initial methods are utilized to gather potential references:

- (a) review all National Training Center policy letters and standard operating procedures;
- (b) interview leadership from major units at Fort Irwin to include Operations Group, 11th Armored Cavalry Regiment, 916th Brigade and post headquarters;

(c) review Combined Arms Center doctrinal publications and regulations on Knowledge Management and lessons learned across the Army;

(d) review articles specific to corporate knowledge management, written for private business knowledge management utilizing the University of Oregon library site and;

(e) continue to utilize the following sub questions for analyzing potential sources.

- How is standardized knowledge management defined?
- How do corporations and other large organizations utilize knowledge management?
- How effective are these organizations at KM?
- What are best practices and processes in knowledge management?
- What are the best tools for knowledge management?

Using the UO libraries is a key to early success in the search strategy. The first query is of the general database searching *knowledge management in human resources*. This search results in over 5,000 potential sources. The search strategy is narrowed to business articles as the business database has the most potential sources compared to others. This strategy returns promising results. Another tactic involves entering the keywords *standardized knowledge management* and *standardized knowledge management in the army* in the UO library general database. This search returns mixed results, as many articles are management related, yet do not pertain specifically to the military or knowledge management.

As the search is expanded, Google Scholar outside the UO Libraries is utilized with the previous keywords. The search returns pertinent sources, but not all are complete sources and some references are entire books (requiring purchase). The Combined Arms Center website, the academic center of the United States Army, is another source. The search of this website returns several relevant knowledge management articles and publications.

**Keywords.** After analyzing the search results, the final list of search terms contains the following:

- *knowledge management in human resources*
- *standardized knowledge management*
- *standardized knowledge management in the army*
- *knowledge management best practices*
- *knowledge management tools*
- *knowledge management governance*

**Search engines and databases.** Relevant articles for this study are accessed from the following databases:

- Web of Science
- Social Sciences Premium Collection (1,048)
- MEDLINE/PubMed (NLM)(953)
- Social Sciences Citation Index (Web of Science)(893)
- Selected Facet Elsevier (CrossRef)(752)
- SciVerse ScienceDirect (Elsevier)(652)
- Wiley Online Library (287)
- ERIC (U.S. Dept. of Education)(221)
- Informa - Taylor & Francis (CrossRef)(171)
- Springer (CrossRef)(141)
- Sage Publications (CrossRef)(139)
- JSTOR Archival Journals (132)

- SAGE Journals (110)
- PMC (PubMed Central)(66)
- American Society of Civil Engineers (CrossRef)(32)

**Documentation approach.** References for this study are documented using three methods. The first method involves manually saving the reference in PDF format to a local file and documenting the source on a reference listing. The second tool is a locally saved Excel document, which serves as the source for quick access and the capture of keywords, catch phrases and specific pages or notes from the literature. Finally, references are saved using Zotero, the online documentation wizard. Once a source is finalized, it is uploaded into Zotero and annotated as complete.

**Reference evaluation criteria.** Five major characteristics are utilized to determine evaluation criteria for all references, utilizing an article titled *Evaluating Information Sources*, that is authored by the Center for Public Issues Education (2014).

Authority – authors with advanced degrees and reputable employers lend more authority than those without and therefore efforts are made to select sources whose authors hold these credentials. Sources are selected that are published by universities, scientific journals or similar sources in recognition of the fact that they have undergone several rounds of scrutiny, usually with multiple peer-reviews. Peer-reviewed work and print publications are preferred.

Timeliness – references are selected with a focus on literature that has publication dates within the last fifteen years. This timeframe is selected because most information in the knowledge management field that is older than 15 years is outdated as it does not reflect the most current advancements in technology, the speed of information flow or the growth of data analytics and big data utilization. In addition, knowledge management was a relatively new

concept fifteen years ago and the majority of best practices have been established within that time period.

Quality – references are selected that demonstrate proper spelling, grammar and punctuation. Emphasis is also placed on sources that present information in a clear and logical structure.

Relevancy – focus on works that cover the topics of knowledge management best practices, tools, and governance structures and that are pertinent to human resource professionals, managers and employees of large organizations.

Bias – literature is selected that is supported by evidence and where multiple viewpoints are presented. Obvious bias such as white papers from vendors selling a related product or service are avoided. Preference is given to sources that are cited and referenced by other, credible literature.

References were only selected that are published in (a) peer-reviewed journals, (b) current books, (c) recognized conference proceedings, (d) reputable professional organization white papers, and (e) military sources.

## Annotated Bibliography

### Introduction

The following Annotated Bibliography presents 17 references that review aspects of knowledge management. References are chosen to assist human resources professionals, management and employees gain useful education from successful knowledge management systems and processes. References are presented in three categories: (a) knowledge management best practices, (b) knowledge management tools, and (c) knowledge management governance.

Every annotation consists of three elements: (a) the full bibliographic citation, (b) an abstract, and (c) a summary. The abstracts included are either complete as published, or are slightly modified. The summaries provide an overall picture of relevance to the audience and address key points which relate to the research question.

### Category 1: Knowledge Management Best Practices

**Afacan Findikli, Yozgat, & Rofcanin.** (2015). Examining organizational innovation and knowledge management capacity the central role of strategic human resources practices (SHRPs). *Procedia - Social and Behavioral Sciences*, 181, 377-387.

**Abstract.** This study was an effort to test the effects of strategic human resources practices over organizational innovation (exploration and exploitation) and knowledge management capacity of firms (knowledge sharing and knowledge application). Data were gathered across industries operating in Turkey (N = 109). Results from regression analyses emphasized that only certain practices in strategic human resources had predictive power of organizational innovation. Moreover, a similar pattern was observed between the strategic human resources practices and knowledge management capacity of

firms. Overall, findings spoke to the importance of compensation, training and performance appraisal systems as predictors of our dependent variables. Discussions, further suggestions and limitations are provided at the end.

**Summary.** This article describes the importance of innovation to achieve top performance within a firm. Human knowledge, skills and capabilities provide organizations with the competitive edge to achieve strategic targets. Knowledge management is recognized as a process that involves several steps to include knowledge creation, collection and maintenance. Organizational innovation and knowledge management were most successful in firms that had top training and compensation programs. Most importantly, knowledge management was the most prevalent in firms that reviewed KM as part of the employee performance review.

This article is useful for this specific research study because the practice of incorporating knowledge management utilization within the annual employee review is presented as a powerful tool that organizations' management and human resources departments' can leverage. The author notes that when an employee's future depends on the ability to understand and utilize knowledge management tools and processes, the employee is motivated to integrate knowledge management into all aspects of his or her professional practice. In addition, this reference provides information on creating positive incentives to keep employees hungry for innovation with proper training and pay structure.

**Ardichvili, A.A. & Yoon, S.W.** (2009). Designing integrative knowledge management systems: Theoretical considerations and practical applications. *Advances in Developing Human Resources*, 11(3), 307-319.

**Abstract.** Alignment between strategic and operational processes and organizational learning and knowledge management (KM) solutions is a key to sustained competitive advantage of business organizations. Currently, most KM design approaches follow linear and individual-centered frameworks similar to traditional instructional systems design models and pay little attention to how user collaboration occurs. Furthermore, KM is rarely integrated with organizational learning systems. The authors of this study use concepts from the situated learning literature, Vygotskian theory of cognitive development, and a holistic learning and performance architecture to propose a new approach to the design of integrative learning and KM systems. The article concludes with specific recommendations for systems designers and implications for HRD professionals.

**Summary.** The article notes the importance of alignment between how an organization's strategy and work processes and its knowledge and learning solutions is required for sustained success. The authors point out that a knowledge management program is more successful when viewed by employees as a "work in progress", or evolving artifact. Utilizing metadata (data about data) to monitor knowledge creation is suggested, as the organization can easily identify the most popular and important content based on data creation statistics. Business analytics or real time usage statistics are easy means of obtaining this information.

Knowledge management should be viewed as a dynamic interaction, with a user friendly design, metadata utilization in place to monitor usage, easy and efficient access to information and the ability to quickly change aspects of the knowledge management system as the organization learns and grows. Knowledge management programs and

processes should not be viewed as rigid, structured systems but rather as a living, growing, dynamic aspect of the organization.

This article is useful to this particular study as it shows how employee access to needed organizational information must be fast and easy. If it is not, employee creativity is stifled and the desire to utilize an organization's knowledge management process and tools to create innovative solutions is lowered. In addition, this article highlights the importance of integrating learning systems with knowledge management solutions and fostering user collaboration. The authors provide an example of a flexible eight-step model for integrating knowledge management within an organization. This model culminates with the creation of a system that identifies key players, roles and responsibilities, identifies potential friction points, and addresses these friction points before the implementation of a knowledge management plan.

**Butnariu, M., & Milosan, I.** (2012). Best practices to increase progress in knowledge management. *Procedia - Social and Behavioral Sciences*, 62, 739-743.

**Abstract.** This paper outlines and discusses the professional abilities, skills, training and competences necessary in order to implement best practices and to push forward the progress in knowledge management within Higher Education. Explicit knowledge management is objective and relational knowledge that can be expressed through a formal and systematic language with words, numbers, formulas, etc. The authors elaborate on the educational, managerial and quantity aspects of knowledge management in a university setting. Findings–The organizational knowledge management model, driven by pre-specified plans and goals, aimed to ensure optimization and efficiencies are

based primarily on building consensus, convergence and compliance. Practical implications—The quality of knowledge can be estimated by its ability to assure a progress for the knowledge management. Also the knowledge will produce solutions faster and more effectively in universities. The authors encourage knowledge claims, having a degree of utility, as well as a degree of satisfaction. Originality/value—This paper draws on experience in implementing knowledge management in Higher Education, in order to support scientists to discuss their best practices. Typically, teachers were expected to work to support, initiate and maintain the processes of knowledge management in Higher Education.

**Summary.** This article provides an overview of the challenges that a university faces regarding knowledge management and change management. A university is at the center of new knowledge creation, learning and creativity. Scientific theories are tested for sound principles and adjusted as needed. Society depends on the imagination, creativity and knowledge creation that come from universities therefore, having knowledge management processes in place in universities is paramount. The authors provide recommendations for incorporating change management within the knowledge management plan, starting with active engagement from individual professors.

This article is useful to this particular study because it provides an overview of the importance of knowledge management and change management within a university setting. Similar to military training centers, universities have a tremendous amount of turnover, with new students arriving and graduating each year. In addition, turnover of the staff and amongst the professors occurs in a flexible environment, at any time of year and potentially with limited notice or continuity between outbound and inbound

employees. New knowledge, ideas and important research are always being generated and the capture of this information is critical to the university and ultimately society. This article reviews many of the same challenges faced in the military with a high personnel turnover rate and change management strategy as part of the knowledge management concepts. Change management should be part of the knowledge management process, especially for organizations with constant personnel changes.

**Dalkir, K.** (2011). Knowledge management in theory and practice (2nd Edition). Cambridge, MA, MIT Press. Retrieved from <http://www.ebrary.com.libproxy.uoregon.edu>

**Abstract.** The ability to manage knowledge has become increasingly important in today's knowledge economy. Knowledge is considered a valuable commodity, embedded in products and in the tacit knowledge of highly mobile individual employees. Knowledge management (KM) represents a deliberate and systematic approach to cultivating and sharing an organization's knowledge base. It is a highly multidisciplinary field that encompasses both information technology and intellectual capital. This textbook and professional reference offers a comprehensive overview of the field of KM, providing both a substantive theoretical grounding and a pragmatic approach to applying key concepts. Drawing on ideas, tools, and techniques from such disciplines as sociology, cognitive science, organizational behavior, and information science, the text describes KM theory and practice at the individual, community, and organizational levels. It offers illuminating case studies and vignettes from companies including IBM, Xerox, British Telecommunications, JP Morgan Chase, and Nokia. This second edition has been updated and revised throughout. New material has been added on the information and library science perspectives, taxonomies and knowledge classification, the media richness

of the knowledge-sharing channel, e-learning, social networking in KM contexts, strategy tools, results-based outcome assessments, knowledge continuity and organizational learning models, KM job descriptions, copy left and Creative Commons, and other topics. New case studies and vignettes have been added; and the references and glossary have been updated and expanded.

**Summary.** This reference is a complete book, covering all aspects of knowledge management theory and best practices. Knowledge management cycle, models, tools and strategies are all prominent chapters within the book. Dalkir uses case studies and scenarios from recognized corporations such as Nokia, IBM and Xerox to explore best practices and unsuccessful approaches to knowledge management. The author stresses that organizational culture is a critical part of effective knowledge management. The culture of an organization is of extreme importance if change is to be made within any organization. Communication systems are essentially used to disseminate culture, according to Dalkir. How information is passed and managed ties directly to the culture and climate of an organization. Organizational cultures that are positive and have engaged leadership will be successful in sustaining successful knowledge management programs, while those that are lacking leadership engagement and focus on knowledge management will struggle to succeed at knowledge management. To have successful knowledge management programs, organizations must first look to their cultures to ensure a unified approach and buy in from all levels of the organization.

This reference is useful to this particular study because it provides a deep dive into all aspects of knowledge management. Key concepts that are useful for this study include using organizational culture to motivate a workforce, along with organizational behavior

concepts. The idea that organizational culture is an important component of knowledge management programs is relevant to this study because management and leadership have control over the climate and culture of an organization (Ward, 2013). Using basic concepts of organizational behavior, knowledge management success is tied directly to the ability of leadership to influence acceptance, change and ultimately an improved way of conducting daily operations.

**Holsapple, C. , & Wu, J.** (2011). An elusive antecedent of superior firm performance: The knowledge management factor. *Decision Support Systems*, 52(1), 271-283.

**Abstract.** Knowledge management (KM) concepts, principles, and technologies provide a foundation for understanding and building systems for acquiring, assimilating, selecting, generating, and emitting knowledge—a crucial resource of the firm. In the knowledge management community, it is commonly contended that knowledge, and capabilities for processing it, comprise a major resource that can differentiate one firm from another in the sense of yielding better performance or a competitive edge. However, aside from anecdotes, there has been little to substantiate this contention. Can any empirical link be discovered between a firm's KM success and that firm's financial performance? To develop an answer to this question, we use an independent research company's reports of firms judged to be highly successful in their KM initiatives, plus related data reported by COMPUSTAT. As an initial investigation of the linkage between KM performance and firm performance, as measured by financial ratios, this study uses the Matched Sample Comparison Group methodology to evaluate research hypotheses. The analysis reveals a heretofore elusive antecedent of firm performance—evidence that

superior KM performance is indeed a predictor of superior bottom-line performance. This study contributes to the information systems (IS) literature by demonstrating that KM, a basic foundation for IS, is an important factor to consider from the standpoint of achieving strong financial performance. As such, it suggests that KM furnishes an important context for understanding designs, applications, and possibilities for IS with respect to achieving such performance. In the context of devising and executing KM initiatives, both technological and human treatments of knowledge need to be cultivated and integrated in ways that lead to superior KM performance. This study also contributes to the management literature by going beyond anecdotes and case studies in buttressing the proposition that a firm's KM competencies are an important ingredient in that firm's performance. It solidifies the *raison d'etre* for investigating KM phenomena and methods (computer-based and human), both within and across modern organizations. It gives practicing managers evidence that bottom-line benefits are indeed associated with superior KM strategy and execution.

**Summary.** This article provides an overview of knowledge management, which the authors note is very important to business success. Business success is measured through financial performance. The authors tie the financial success of organizations to success at devising and executing knowledge management initiatives. The authors note eight criteria that lead to KM success in organizations; these criteria are (a) success in establishing organizational knowledge culture; (b) top management support for knowledge management; (c) solid ability to develop knowledge; (d) success in maximizing intellectual capital; (e) effective in creating an environment of sharing; (f) success in establishing a culture of continuous learning; (g) effective in managing customer

knowledge; and (h) success in the ability to manage knowledge in ways that create value for the stakeholders. The performance criteria should be considered when designing assessment measures and benchmarks for a knowledge management program. This article is useful for this specific research study because it identifies firms with superior knowledge management processes to use as benchmarks and defines eight criteria for top performers. The top firms excel at these eight knowledge management principles, thus the identification of these principles provides a blueprint to follow for those organizations interested in implementing and sustaining successful knowledge management programs.

**Mostert, J., & Snyman, M.** (2007). Knowledge management framework for the development of an effective knowledge management strategy. *SA Journal Of Information Management*, 9(2). <http://dx.doi.org/10.4102/sajim.v9i2.25>

**Abstract.** To survive and prosper in a highly competitive and rapidly changing environment, organizations need to explicitly manage their knowledge. This article reports on a knowledge management framework that provides a clear and unambiguous knowledge base, which in turn can serve as a platform for the development of an effective knowledge management strategy. An appropriate knowledge framework is selected and combined with an appropriate management framework to create a well-defined, theoretically sound knowledge management framework.

**Summary.** This article reviews the dynamic knowledge process, which includes:

- Knowledge storage and retrieval,
- 'Sense making', understanding and problem solving,
- Explicit knowledge creation,

- Expression of knowledge through physical skills and,
- Knowledge process coordination.

Using appropriate knowledge storage and retrieval techniques is paramount to future success, as it insures the knowledge artifacts are not corrupted or lost. The success of an organizational KM program relies upon the quality of the framework. Many organizations make the mistake of rushing to a knowledge management process across the company without thinking first of the processes and specifically the individual.

Organizational knowledge management starts with individual knowledge management.

When implementing a knowledge management program, the firm should look at how their employees manage their own knowledge. How is individual knowledge stored, retained, protected, utilized and created? Focusing first on the person and identifying good or dysfunctional processes at the individual levels serve as building blocks for implementing a successful knowledge management program across the organization. This article is useful for this specific research study because it shows the link between individual and organizational knowledge. The military trains individuals in a wide variety of skills; the capture and easy provision of individual knowledge as part of a knowledge management program is critical to the success of a military-based knowledge management program.

### **Category 2: Knowledge Management Tools**

**Chen, Chung-Jen, & Huang, Jing-Wen.** (2009). Strategic human resource practices and innovation performance — the mediating role of knowledge management capacity. *Journal of Business Research*, 62(1), 104-114.

**Abstract.** This study examines the role of knowledge management capacity in the relationship between strategic human resource practices and innovation performance from the knowledge-based view. This study uses regression analysis to test the hypotheses in a sample of 146 firms. The results indicate that strategic human resource practices are positively related to knowledge management capacity which, in turn, has a positive effect on innovation performance. The findings provide evidence that knowledge management capacity plays a mediating role between strategic human resource practices and innovation performance. Finally, this study discusses managerial implications and highlights future research directions.

**Summary.** Strategic management focuses on innovation as a key enabler of creating value and remaining competitive. Part of innovation is the ability to harness knowledge, which is tied directly to knowledge management capacity. Employees are often unwilling to share their knowledge with others due to self-interest and lack of trust. This is overcome through performance appraisals and compensation, which reward creativity, knowledge management practices and problem solving.

This article is useful for this particular research study because it reviews approaches that leadership can utilize to foster creativity and innovation amongst their employees such as leveraging human capital, developing incentive based work performance and fostering employee involvement. The authors also provide information on how to establish incentives based on risk tasking, innovation and knowledge management abilities to overcome the natural unwillingness of employees to share knowledge for the improvement of the organization. The authors of this reference conducted this research

specifically for the human resources professional, one of the primary audience members for this research.

**May, D. , & Taylor, P.** (2003). Knowledge management with patterns. *Communications of the ACM*, 46(7), 94-99.

**Abstract.** Knowledge management--its models, products, tools and techniques--is beyond the point at which consumers can perceive substance over market-induced expectation. The fact that an organization's ability to marshal and exploit its knowledge as a potent tool in sustaining its competitiveness was never in doubt. From business-driven extreme programming teams to knowledge-worker cells, the potential of proactively managing the implicit and explicit knowledge that emerges from work and interaction has been widely recognized. But as knowledge management has progressively distinguished itself from the traditional fields of data and information management, its proponents have learned that knowledge is a difficult and challenging thing to manage. The discipline of knowledge management reflects this difficulty in its broad philosophical base and the range of approaches, from technological ones based on information management infrastructure through to socio-technical ones that measure and develop knowledge capital.

**Summary.** This article provides a solid foundation of the organizational benefits of knowledge management. Of particular note, the authors cover the value of knowledge management to new employees, which is an important concern in the military, as new personnel are constantly arriving. The authors note that managing knowledge is a challenging undertaking for organizational leadership, yet the value is worth the effort.

Overcoming organizational resistance is a topic of focus within this reference, along with how management can make knowledge management simple, effective and easily understood by all levels of a firm.

This article is important for this specific research study because it stresses the importance of creating similar patterns across all domains of knowledge. This practice helps build usage of and buy in for knowledge management programs within an organization. New employees are common across all organizations, yet the military is especially familiar with high personnel turnover as most personnel change duty stations every two or three years. Personnel are in constant flux, and continuity is always a challenge. The person vacating a position has a vast amount of knowledge and authority at his or her job, yet the replacement is subject to the amount and quality of knowledge artifacts provided by the person he or she replaced. If little or no information is given, knowledge must be recreated, annotated and passed along. The organizational benefits provided by access to reliable knowledge artifacts through successful knowledge management programs are of particular concern in the military, and this article captures that valuable lesson.

**Vaccaro, A., Parente, R., & Veloso, F.** (2010). Knowledge management tools, inter-organizational relationships, innovation and firm performance. *Technological Forecasting & Social Change*, 77(7), 1076-1089.

**Abstract.** The business value of information technology is an enduring research question. This research provides new insights to better understand the mechanisms supporting this relation by analyzing the impact of knowledge management tools (KMTs) on the performances of business units involved in inter-firm collaborative innovation projects.

We extend current literature by developing and empirically testing a model where: (1) the use of KMTs is affected by critical organizational variables, (2) KMTs can impact the innovation and financial performances of business units. We find that mutual trust and culture for change do not affect the extent of the use of KMTs, while collaborative experience and naturalness in using ICTs as substitutive of face-to-face contacts have a significant impact. Moreover, we show that a more intense use of KMTs has a direct positive effect on new product performance and speed to market, as well as on financial performance. Yet, only new product performance acts as an indirect conduit linking KMT use and financial performances. This article provides a discussion and perspectives of further research concerning the impact of KMTs on innovation practices in inter-firm collaborative environments.

**Summary.** This article explains the benefit of knowledge management, particularly on design innovation and firm creativity. This article is important to this particular study because it explains the value of change within a management team. It must be embraced and put forth into the organization if anything different is expected to occur. Firms that utilize knowledge management tools have a greater profit margin, better performance and speed to market. While the military is concerned about performance and cost measures, speed or “tempo” is extremely important when conducting operations. The quicker a force gets to the fight and can sustain it, the better. This reference is of value to management, particularly military leaders as they look at what knowledge management tools can bring. Speed in operations, processing and many sustainment functions such as human resources are combat multipliers and increase force effectiveness. This concept is key for junior leaders in the military as it allows for an easy to understand benefit of

knowledge management. A young soldier taking the time to capture lessons learned from a foot patrol and using knowledge management to allow the information to disseminate to the rest of his battalion, could save a life on the next mission. Incorporating knowledge management into operational planning is a tremendous asset for any organization. The quicker and easier it is for an organization to create and share knowledge, the better the entire organization.

**Yang, J.** (2010). The knowledge management strategy and its effect on firm performance: A contingency analysis. *International Journal of Production Economics*, 125(2), 215-223.

**Abstract.** This study examines the role of knowledge management capacity in the relationship between strategic human resource practices and innovation performance from the knowledge-based view. This study uses regression analysis to test the hypotheses in a sample of 146 firms. The results indicate that strategic human resource practices are positively related to knowledge management capacity which, in turn, has a positive effect on innovation performance. The findings provide evidence that knowledge management capacity plays a mediating role between strategic human resource practices and innovation performance. Finally, this study discusses managerial implications and highlights future research directions.

**Summary.** Information technology implementation alone does not equate to knowledge management success. The authors encourage the utilization of research and development to drive knowledge management strategy. At the heart of knowledge creation is the organizational research and development team, which can provide innovation for improved performance. Employees often will not share information as they feel it will

decrease their personal value to the firm if they share secrets or best practices learned over the years. The article suggests making policy specifically covering knowledge management to dispel fear and encourage participation as a management tool.

This article is useful to this particular research study because it shows the importance of an official policy letter covering organizational knowledge management, yet another effective tool to encourage knowledge management participation and organizational behavior change.

**Yongsun P., & Choi, D.** (2005). The shortcomings of a standardized global knowledge management system: The case study of Accenture. *The Academy of Management Executive (1993-2005)*, 19(2), 81–84. Retrieved from <http://www.jstor.org/stable/4166177>

**Abstract.** This study examines the global knowledge management (KM) experiences of Accenture, a pioneer in organization-wide KM efforts. We interviewed 18 KM managers and consultants in its U.S. and East Asian offices. We found that despite its significant efforts, Accenture was falling short of fully harnessing and transferring management knowledge across its global organization. Our study indicates that Accenture's global KM strategy, based on its "one global firm" vision, did not make sufficient considerations for local or regional challenges. Accenture was unsuccessful in motivating its East Asian consultants to contribute to KM by failing to show appreciation for their knowledge. Furthermore, Accenture appeared not to have provided adequate support for addressing cross-cultural challenges. Finally, its push for a standardized global KM practice made insufficient allowances for its local offices to address their own needs.

**Summary.** This article reviews the case of Accenture, one of the leading global consulting firms. Despite viewing knowledge management as a key competency for establishing competitive advantages, Accenture did not succeed in their global KM strategy. At the heart of the downfall was poor communication between the teams in the western and eastern parts of the globe. Consultants based in the United States shared their knowledge readily amongst themselves, yet they did not involve the consultants from the east. In return, the Asian consultants felt snubbed and did not participate in the knowledge management vision. A key point of failure was the lack of knowledge submission from the consultants themselves. Instead, the reliance was on KM staff to gather knowledge artifacts, and this staff could not support every local office. The authors note that control should have been removed from the corporate staff and in the hands of the local field offices.

This article is useful for this specific research study because it shows how a large, powerful globally dispersed organization failed at knowledge management for a variety of reasons. These lessons learned are valuable for any developing knowledge management program, especially the importance of educating the lower levels of the organization. Accenture failed to utilize the local field offices, instead relying on corporate staff to execute a global knowledge management plan. The failure stemmed from a breakdown in communication, putting two sections of the organization at odds. The authors assert that delegating authority and empowering the lowest levels of the organization to implement knowledge management will lead to success within the KM program. This is an effective approach that leadership charged with implementing KM can utilize, as empowering the lowest levels create buy in and understanding.

**Zhang, L, Wang, H, Cao, Xf, Wang, X, & Zhao, K.** (2012). Knowledge management component in managing human resources for enterprises. *Information Technology & Management, 13*(4), 341-349.

**Abstract.** Both human resources and knowledge are valuable assets for enterprises; therefore, effective management of these assets becomes inevitably critical for business success. While human resource management systems have been a research topic for more than two decades, knowledge management systems applied to human resource management are relatively new to both academia and industry. This study examines the use of knowledge management in a business environment such as human resource management. The evolution of information systems and information processing in the human resource management domain is presented, and a knowledge-based decision support system for human resource management is proposed.

**Summary.** The authors cover the importance of knowledge management in business performance. Effective knowledge management leads to operational effectiveness, organizational creativity and higher quality of goods and services. Knowledge management has been very successful when utilized with business functions to include accounting, marketing, and procurement among others. Functional systems become intelligent when applied with knowledge management systems and processes. The authors point to the growing need for KM within the human resource departments of organizations.

This article is important to this particular study because the link between human resources management and knowledge management systems are addressed. The authors

point to the growing need for KM within the human resources departments of organizations and note specifically how the invention of the Internet and its increased utilization across all organizations has resulted in human resources tasks and functions that are increasingly complex.

This article is valuable for senior leadership, as knowledge management is often a focus in operations and IT, but limited focus has been placed on the HR department to date. The authors advocate for a comprehensive knowledge management strategy for the improvement of the entire organization.

### **Category 3: Knowledge management governance**

**Dobre, O.** (2012). Managing human resources in the knowledge-based economy. *Review Of Applied Socio-Economic Research*, 3(1), 68-76.

**Abstract.** In the management of human resources, knowledge workers have been considered as adding high value to their organizations and as being the cream of the workforce. The globalization process as well as the easier access to technology has changed this paradigm. Nowadays, the knowledge workers are found at almost all levels of the workforce, from low wages to high wages. In addition, the technological change is increasing the demand for skilled labor and has modified the relationship between employees and employers. The employees have traditionally expected a stable and lifelong employment, but in the knowledge-based economy they have to update their skills continuously. Effective knowledge management is about managing people and systems so to foster the use of information in the organizations. The information should be accessible to individuals and the employees should be encouraged to develop and use their knowledge to create value for their organizations. The efficient knowledge transfer

within the firm plays a significant role on the ability of an organization to fully use its knowledge-based competitive advantage, and in the economic development of countries.

**Summary.** This article provides an overview of human resources developments. The author proposes that training and collaboration are key factors in an organization's successful implementation of knowledge management practices within the HR arena. Collaboration across departments and within other agencies aids in the successful implementation of KM strategies. Structures and processes are important, specifically within training and communication. Communication is one of the biggest challenges an organization faces, and a structured, codified process will aid in collaboration and cooperation. Human resources management is increasingly complex, yet technology has offered tools that can be applied with the proper training. These tools include global communication, knowledge databases, data storage, digital client databases and knowledge forums, which allow knowledge sharing in real time.

This article is useful for this specific research study because training is at the backbone of a successful knowledge management program. Training is a knowledge management governance tool, allowing for the improvement of a KM program and the modification of procedures and methods. Technology has provided tremendous capabilities to human resources professionals, with training governance a focal point of a successful knowledge management program. Training governance involves the deliberate planning, resourcing and execution of knowledge management based training for an organization. Training is recorded and tracked to ensure all employees are receiving the required education and have the proper tools to contribute to the organizational knowledge management program.

**Ichijo, K., & Nonaka, I.** (2006). Knowledge creation and management: New challenges for managers. Cary, NC, USA: Oxford University Press, USA.

**Abstract.** This book presents the latest management ideas in knowledge creation and management in readable and non-technical chapters. Leading experts have contributed chapters in their fields of expertise. Each distils his or her subject in a chapter that is accessible to managers who want to learn what can be applied to their organizations without the distracting details of research methodology. Each chapter, however, is based on careful research. The book is organized so that readers can easily find chapters of most interest and value to them. The emphasis is on the practical applications of knowledge.

**Summary.** The authors of this book designed for managers review the importance of the creation of knowledge and knowledge management processes to leverage the knowledge. In addition, the book explains why only four companies with employees greater than 200,000 have profits of more than \$25,000 per person. These companies are Toyota, Citi Group, IBM and General Electric. The managers in these companies are able to harness knowledge and make it easy to understand and disseminate amongst a vast organization by focusing on training, compensation related to innovation and a communication strategy that is easy to understand.

This article is important for this particular study because it shows large organizations succeeding at knowledge management and explains important strategies for managers across any organization that wish to successfully employ and leverage knowledge management. The military is a large organization that struggles to successfully implement knowledge management programs; this book is useful for this study as it provides best

practices and case study examples of how to successfully implement and maintain knowledge management systems and processes in large organizations. A specific example of best practices that apply to this study include Toyota's ability to get all employees to buy in to the improvement focus. Across the organization, the employees are looking for ways to make each aspect of the organization better, more effective and efficient. This creates an environment of knowledge, where everyone is encouraged to share.

**United States Combined Arms Center** (2014). Army knowledge management principles.

<http://usacac.army.mil/cac2/AOKM/aokm2008/A4%20Doc%201%20AKM%20Principles%2025%20JUN%2020081.pdf>

**Summary.** This article is pulled directly from the U.S. Army's doctrine source, located in Fort Leavenworth, known as the Combined Arms Center. This center is a military "think tank" with senior leaders using lessons learned and personal experience to create the policy and regulations of tomorrow. The article provides an overview of what Army knowledge management (KM) should embody. Twelve (12) principles of knowledge management are introduced, providing a way for leadership at all levels to introduce and successfully practice knowledge management. The article provides an exact definition of KM, considering both the tactical and garrison mission. Case studies are provided as a means of illustrating successful real world scenarios in which units utilized KM. The article is written in standard format; however the exact author is missing.

This article is useful for this specific research study because the U.S. Army's viewpoints on knowledge management are addressed. With the creation of the Cyber Command, an increased interest and focus on knowledge management is growing across the military.

The twelve guiding principles of knowledge management are important to compare and contrast with similar guidelines from other studies and amongst other organizations.

**Zyngier, S., & Venkitachalam, K.** (2011). Knowledge management governance – a strategic driver. *Knowledge Management Research & Practice*, 9(2), 136-150.

**Abstract.** This paper investigates how knowledge management (KM) governance drives the effective implementation of KM strategy in organizations. To this end, we analyzed the survey evidence from 218 organizations from the perspective of KM governance, selection of techniques in the development and implementation of knowledge strategy and its alignment with business strategy. Based on the analysis, we have developed a model of KM governance explaining elements of KM maturity that lead to strategic benefits realization. We reveal the relative importance of the roles of KM authority entities and the vital link between KM governance and corporate governance. These underscore how the KM governance environment supports the effective management of knowledge through strategically aligned, governed, transparent activity.

**Summary.** The authors assert that business and knowledge strategy are key factors in determining an organization's future success. The authors advocate for establishing a KM strategy within a firm that utilizes a governing body to review policy and procedures, allows change to the strategy as needed and views the entire KM process as a learning experience. Zyngier and Venkitachalam (2011) note that organizations which have a stakeholder group that oversees the implementation and development of a KM program experienced strategic benefits. The authors state that deliberate knowledge management governance is vital to success within any organization.

This article is useful for this specific research study because it allows for governance that is deliberate and methodical planning, assessment and feedback for a KM plan.

Managers, human resources professionals and employees can all benefit from a knowledge management reference that provides governance guidelines with specific and detailed implementation strategies. A deliberate and methodical approach to knowledge management governance in every aspect of a program leads to KM success.

**Zyngier, S.** (2011). Knowledge management: Realizing value through governance. *International Journal of Knowledge Management*, 7(1), 35+.

**Abstract.** Knowledge Management (KM) governance is the implementation of authority through a framework to ensure the delivery of anticipated or predicted benefits of KM strategy development and implementation in an authorized and regulated manner. KM governance also relies on measurement and evaluation of the effectiveness and efficiency of all aspects of KM, particularly the outcomes of strategy implementation to ensure that strategic benefits are realized. This paper examines the results of a global survey of people involved in the development and implementation of KM strategies. Responses came from 34 countries across every continent. Using descriptive and inferential statistics, this paper finds clear evidence of the measurability of KM outcomes through KM governance. These research findings strengthen the proposition that KM governance supports the capacity of KM governance to realize and reveal the value from, or the return on investment (ROI) of KM strategy development and implementation; the selection of KM tools and techniques is less of a consideration in this regard.

**Summary.** This article points to the fact that knowledge management governance is a rarely covered topic when firms review KM. A steering committee or boards were found to be effective governing bodies to oversee KM strategy and guide an organization to future success with their KM programs. The authors provide specific recommendations for increasing oversight and management of KM programs including managing risk, authorizing KM activity, measuring outputs and conducting evaluations, and providing financial control. The research from this study provides a solid foundation for implementing KM strategy to achieve future strategic benefits.

This article is useful for this specific research study because knowledge management governance is a relatively new topic. The authors provide evidence that having a governing body, such as a committee to provide oversight and consistent guidance is of value when implementing knowledge management programs. This point of view is quite in line with the military decision making process of deliberate planning and is accomplished through a governing body, which provides the process for methodical assessment and feedback during the entire duration of the knowledge management program. Of particular value is the recommendation the authors provide to increase oversight and management of a KM program, which cultivates future success.

## **Conclusion**

Knowledge management is defined as the process of acquiring, processing, codifying, storing, distributing and applying knowledge (Zhang, Wang, Cao, Wang, & Zhao, 2012).

Knowledge management permeates multiple facets of organizations, including processes for data management, the strategic leveraging of instructional and information technologies and tools, and governance structures (Ardichvili & Yoon, 2009). The standardization of knowledge management is defined by the U.S. Army as a discipline that promotes an integrated approach to identifying, retrieving, evaluating, and sharing an enterprise's tacit and explicit knowledge assets to meet mission objectives (United States Combined Arms Center, 2015). The focus of this Annotated Bibliography is on best practices in knowledge management to address a lack of standard knowledge management processes, tools, and governance structures at the National Training Center at Fort Irwin, California.

Knowledge management best practices are examined within this Annotated Bibliography to assist human resources professionals, senior leadership and soldiers at Army Training Centers. Each reference is specifically chosen to address the best methods and tools for knowledge management, aid in defining standardized knowledge management practices and provide insights into the utilization and effectiveness of knowledge management within large organizations. Research is addressed within three categories: (a) knowledge management best practices, (b) knowledge management tools, and (c) knowledge management governance.

### **Knowledge Management Best Practices**

The research identifies a variety of best practices for knowledge management. These themes include incorporating knowledge management utilization as part of the annual employee review (Afacan, Yozgat & Rofcanin, 2015). Including an employee's use of knowledge

management practices as a measure of performance and tying successful performance to compensation provides powerful leverage during the annual employee review. In addition, providing the proper incentives for employees to remain eager to learn and improve the knowledge management program is instrumental in ensuring that the overall knowledge management program is successful (Afacan, et al., 2015). Top performing knowledge management firms utilize performance benchmarks to establish the knowledge management vision, provide a blueprint to employees and gauge progress towards associated goals (Holsapple & Wu, 2011).

Another useful best practice is to encourage employees to view knowledge management as a living, growing aspect of the organization that should be consistently monitored (Ardichvili & Yoon, 2009). This process is aided by integrating knowledge management with the organization's learning systems (Ardichvili & Yoon, 2009). Ensuring that there is alignment between an organization's strategic and organizational processes and organizational learning and knowledge management practices is a necessary function in building competitive advantage (Ardichvili & Yoon, 2009).

Change management should be viewed as part of the knowledge management process, especially for organizations with high personnel turnover (Butnariu & Milosan, 2012). Organizational culture is a component of knowledge management programs, as it is a reflection of the organization (Dalkir, 2011). Dalkir (2011) notes that communication systems are used to disseminate culture, and that the means of managing and transmitting information tie directly to an organization's culture. A true dedication from all levels of the organization will assist in building and maintaining a successful knowledge management program (Dalkir, 2011). Mostert and Snyman (2007) note that individual knowledge management is a part of the overall

knowledge management process, including the need to identify how individual knowledge is stored, retained, protected, utilized and created. By determining how each person creates his or her own knowledge and identifying sound or dysfunctional processes at the individual level, an organization can build a successful knowledge management program (Mosert & Snyman, 2007).

### **Knowledge Management Tools**

Successful knowledge management tools are instrumental in creating a knowledge management system that is easy to use, and employs similar patterns; these factors are particularly important for new employees (May & Taylor, 2003). A user-friendly knowledge management system is helpful in organization that experience high personnel turnover, as the person replacing the departing employee is subjected to the quality of artifacts provided (May & Taylor, 2003).

Employees are often unwilling to share their knowledge with others due to self-interest and lack of trust. One approach to overcome this issue is through performance appraisals and compensation that reward creativity, knowledge management practices and problem solving (Chen & Huang, 2009). Leveraging human capital provides organizational leadership with the tools to elevate the quality and effectiveness of the knowledge management program (Chen & Huang, 2009).

Yang (2010) suggests that one effective management tool to dispel fear and encourage participation is to make policies specifically covering knowledge management. Yang (2010) encourages innovation as a driving force behind knowledge management success, which starts with organizational leadership and policies that support this behavior.

Vaccaro, Parente & Veloso (2010) identify generational difference in attitudes towards knowledge management tools, noting that the “young highly skilled engineers” in their study do

not consider knowledge management tools to be new technology (p. 1084). Younger generations are often very familiar with knowledge management tools and are waiting on management to act on technology. User collaborative experience and naturalness in using information and communication technology are predicating behaviors for knowledge management program success (Vaccaro et al., 2010). The more quickly and easily an organization can create and share knowledge, the more the entire organization will benefit.

Yongsun and Choi (2005), provide recommendations for best practices in utilizing knowledge management systems in large, multinational organizations based upon the findings from a case study of Accenture, a global consulting firm and pioneer in the knowledge management field. They note that cross-cultural differences among field offices located in different countries posed challenges for their attempt to enforce a standardized approach to knowledge management practices among all offices. Yongsun and Choi (2005) conclude that empowering local field offices with a large organization's knowledge management program is more effective than relying on corporate staff to do so in a centralized fashion.

Finally, human resources departments are in need of knowledge management, as human resources departments generate, manage and disperse organizational knowledge. Zhang et al.,(2012) also note the complexity in human resources tasks and functions that has occurred as a result of the invention of the Internet and its utilization across all organizations. The authors advocate for a comprehensive knowledge management strategy for the organization and the use of a knowledge-based decision support system for human resource management to enable knowledge management success across the entire organization.

**Knowledge Management Governance**

Knowledge management governance is accomplished in a variety of ways. Effective, efficient and strategic training is a method of governing a knowledge management program by enabling continuous improvement of the program and modification of associated procedures and methods (Dobre, 2012). The United States Combined Arms Center presents twelve governing principles of knowledge management that cover both the tactical and garrison environment specific to military organizations. Principles of particular importance to the study include establishing a doctrine of collaboration and properly educating knowledge management leaders on the value of knowledge management. The principles should guide all aspects of knowledge management programs for military bases, serving as the core for implementation and oversight. Using organizational principles to govern knowledge management allows senior leadership to tailor knowledge management strategy to their division, brigade or battalion.

Ichijo and Nonaka (2006) provide best practices and case study examples of how to successfully implement and maintain knowledge management systems and processes in large organizations. Ichijo and Nonaka (2006) noted that at the time of publication, only four large organizations with greater than 200,000 employees had profits of greater than \$200,000 per person: Toyota, Citi Group, IBM and General Electric. They analyzed the firms in terms of their ability to leverage knowledge and determined that the organizations' managers were successful in harnessing knowledge, making the information easy to understand, and disseminating the knowledge among employees in their large organizations. Governance processes related to knowledge management that the organizations employed included training, compensation related to innovation, and easy-to-understand communication strategies. Ichijo and Nonaka (2006) noted that success in getting the employees to buy into the improvement focus creates an environment of knowledge, where everyone is encouraged to share.

Zyngier and Venkitachalam (2011) advocate for a governing body to oversee the implementation, development and maintenance of a knowledge management program, as deliberate governance is a key to program success. A steering committee or board can also serve as an effective governing body depending on the organizational structure. Zyngier (2011) also encourages the methodical assessment of knowledge management performance and increased levels of oversight from management to ensure organizational knowledge management success. Deliberate knowledge management program success is a result of deliberate governance (Zyngier, 2011).

### **Summary**

Knowledge is a strategic asset for organizations, and an effective knowledge management program has been proven to provide a competitive advantage (Afacan et al., 2015). By following knowledge management best practices, an organization can utilize performance benchmarks tied directly to the organization's knowledge management process to improve program success; view knowledge management as a living, growing entity that expands and develops with time; and exploit change management as part of the knowledge management process (Ardichvili & Yoon, 2009). Identifying, implementing, and using the appropriate knowledge management tools will enable an organization to leverage human capital, create user friendly knowledge management systems, develop effective policies specific to knowledge management, and empower local offices to implement the most effective approaches to knowledge management instead of relying on centralized corporate staff (Youngson & Choi, 2005). Finally, understanding the need for a knowledge management governance system and processes and implementing a governance structure that is appropriate for the given organizational culture will enable organizations to create a plan to succeed. Deliberate governance of knowledge management programs, through

steering committees, boards and other organizational bodies, creates the assessment and evaluation tools that lead to knowledge management program success.

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